COMMUNITY INVESTMENTS IN SMART GROWTH
A Decision-Maker’s Guide
COMMUNITY INVESTMENTS IN SMART GROWTH:  
A DECISION-MAKER’S GUIDE, No. 5, WAY TO GROW!

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“Way to Grow!” is a series of publications by the Vermont Forum on Sprawl designed to help local officials, citizens and interest groups plan for growth. The first in the series, the Vermont Smart Growth Scorecard, is a community self-assessment tool that can help with citizen participation, updates of town plans and regulations and new programs. The second publication, Growing Smarter-Best Site Planning Practices for Residential, Commercial and Industrial Development, offers examples of smart growth practices in Vermont communities and practical designs that can be applied to projects. Growing Smarter-Making Smart Growth Work explains how communities and citizens can get best site planning practices into the permit review process. A joint publication of the Conservation Law Foundation and the Vermont Forum on Sprawl, Community Rules: A New England Guide to Smart Growth Strategies, the fourth in the series, provides specific standards and examples for regulations in town centers, suburban areas and rural towns that reinforce smart growth principles. For details see Resources on the back cover. Additional copies of this publication are available from the Vermont Forum on Sprawl for $10. A copy in pdf format may be downloaded from our website at www.vtsprawl.org.

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Community Investments in Smart Growth: A Decision-Maker’s Guide

What Is “Smart Growth?”

Growth, and the development that accompanies it, can take many forms—some more desirable than others. Key findings of a recent survey conducted by the Vermont Forum on Sprawl (VFOS) and published in Vermonters’ Attitudes on Sprawl, first in the Exploring Sprawl series, indicate that Vermonters believe:

- Communities should consist of compact settlements surrounded by working landscape, with access to preserved open land. This is Vermont’s traditional pattern of development; and promoting growth in compact centers surrounded by countryside is also a state planning goal.

- Patterns of scattered low-density or strip development, characterized as sprawl, are detrimental to this desired pattern of growth—and, though common, they are not inevitable. Undesired aspects of development that Vermonters most identify with sprawl include commercial strip development, large paved areas, houses scattered over former farm fields, and auto-dependent development.

- It is possible to have growth without sprawl. Smart growth does not mean no growth! It means responding to local and regional needs for housing, employment, goods, and services through more efficient, inclusive development that contributes to, instead of detracts from, the fabric and character of the community.

The VFOS has identified a set of Smart Growth Principles to help guide planning and development in support of growing smarter. These principles form the basis for our “Way to Grow!” series, and for the community investment recommendations in this guidebook.

The Park Place project was a historic but rundown building rehabilitated in the heart of Burlington, replacing substandard apartments with higher quality housing.

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Principles for Smart Growth

1. Plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.

2. Promote the health and vitality of Vermont communities by targeting economic and residential growth to compact, mixed-use centers, including resort centers, at a scale convenient and accessible for pedestrians and appropriate for the community and region.

3. Enable choice in the modes of transportation that are available, and insure that transportation options are integrated and consistent with land-use objectives.

4. Protect and preserve Vermont’s environmental quality and its important natural and historic features, including natural areas, water resources, air quality, scenic resources, and historic sites and districts.

5. Provide the public with access to formal and informal open spaces, including parks, playgrounds, public greens, water bodies, forests, and mountains.

6. Encourage and strengthen agricultural and forest enterprises, and minimize conflicts of development with these businesses.

7. Provide for housing that meets the needs of a diversity of social and income groups in each Vermont community, but especially in communities that are growing most rapidly.

8. Support a diversity of viable business enterprises, including locally owned businesses, in downtowns and villages, and a diversity of agricultural and forest enterprises in the countryside.

9. Balance growth with the availability of economic and efficient public utilities and services, through the investment of public funds consistent with these principles.

10. Accomplish goals and strategies for smart growth by building coalitions with stakeholders, and by engaging the public.

How Municipal Investments Affect Growth Patterns

While it is easy to see the influence on development patterns of large-scale infrastructure investment, such as the interstate highway system, we often overlook the impacts of municipal capital investments. By supporting social and economic activity, these investments shape the functioning and character of our communities. Where we put our roads and bike paths, our sewer and water lines, our schools and post offices, our shopping centers and industrial parks determines to a large extent the patterns of growth in our towns.

Roads that take us out of a village center in different directions, without a way to get from one road to another, lead to dispersed patterns of settlement. In contrast, the “grid” system of roads, common in village centers, supports compact development.

Post offices that are kept in the center of town bring people together, increase access for those who live within walking distance, and support downtown businesses. In contrast, moving post offices to the outskirts of town changes the shape of our communities in negative ways—by pulling people away from the town center, increasing our dependence on automobiles, and reducing the flow of traffic and shoppers in our downtown areas.

The choices we make about public investment have an impact on current and future costs for construction and maintenance, on the health of our environment, and on our quality of life. For example, we can choose whether to invest in increased sewer capacity, or in reduced waste generation; between building crosswalks and bicycle-friendly intersections, or widening our highways. The choices that come with pursuing a vision of smart growth are complex, involve multiple trade-offs, and need to be tailored to the values of each community.

This guidebook is intended to help municipal officials and citizens in Vermont’s small communities understand the impacts of their public-investment decisions on growth patterns in their communities, and to recognize some of the choices they have available.

Many Vermont communities are only beginning to invest in municipal infrastructure. For instance, most of the state’s smaller communities do not have municipal water and sewer. But as Vermont continues to grow and develop, more and more of our communities will be facing infrastructure investment decisions. We hope this guidebook alerts you to the importance of these decisions, individually and collectively, in shaping the kind of community you will have today and in the future.

Effective Municipal Investment, Planning, and Bylaws Work Together

Local public investments in infrastructure are only a part of the picture. In many Vermont towns, private developers build their own roads, parking lots, and/or sewer systems. The infrastructure created by developers affects the patterns of development in our communities as much as—sometimes more than—public investment. State and federal governments also invest in infrastructure that affects patterns of growth.

In recent years, both the state and the federal government
have become more sensitive to the impacts of their investment decisions on municipalities, and have increased the amount of local public involvement in their decision-making processes. Standards are also becoming more flexible, especially in transportation. Communities with a comprehensive plan and bylaws that support it now have leverage to ensure that investments made by all levels of government, and by the private sector, accord with the community’s vision.

Many communities in Vermont and elsewhere are talking about sustainable development or smart growth as a desirable outcome. Yet very few communities have figured out how to translate the rhetoric into reality, by creating plans and bylaws that actually conform to smart growth principles. Research sponsored by the Vermont Forum on Sprawl finds that Vermont town plans often rely on general sentiments such as “maintaining town character,” and lack the specificity and clarity required to impact growth patterns. In many towns, zoning does not back up the town plan; instead it allows, even requires, patterns of land use that lead to sprawl. The final section of this guide, on Planning, introduces tools available for consideration by Vermont communities that have been shown to influence patterns of growth in a smart direction.

How To Use This Guidebook

This guide is a brief introduction to a set of complex topics:

1. Public Facilities & Buildings
2. Investments for Downtown Vitality
3. Conservation and Open Space
4. Mobility
5. Water and Wastewater
6. Community Planning

We hope to spark your thinking about the decisions your community makes, and about their long-term impacts upon the way your community grows. Each section of this guide includes questions that aim to stimulate your thoughts about how the issues that the chapter discusses relate to your community. Each section also includes examples from rural communities in Vermont and around the country.

Not all of the information this guide presents will apply to every community. We urge you to pick a topic that seems most relevant to you at this time, then use the guiding questions to generate discussion among members of your community. At the end of each section, we’ve included a list of resources—technical assistance, publications, and funding sources. We hope you will use them to find answers to questions that may stump the local experts.

Have fun! And involve everyone you can. Effective municipal investment that supports smart growth requires the active participation of planners, decision-makers, those who build and maintain municipal infrastructure, those who make the rules and regulations, and those who use the facilities and services.
PROMOTING SMART GROWTH THROUGH INVESTMENTS IN PUBLIC FACILITIES AND BUILDINGS

Public Buildings

What public buildings are in your town and where are they located? Who makes the decisions about where to locate these buildings, and on where and how they expand? Beyond their specific purposes, what public benefits do these buildings provide? How many buildings are underutilized and available for renovation and/or replacement? How much publicly owned bare or paved land is available for development or redevelopment in your town or village center?

One of the key investments any municipality makes is in its buildings—its town hall, town offices, schools, town garages, museums, community centers, libraries, youth centers, parking facilities, and/or industrial parks. The choices you make about where to locate and how to design the buildings and spaces that house municipal services can powerfully promote, even exemplify the smart growth principles of compact development in town and village centers, reduced reliance on automobiles, and a mix of land uses.

Historically, public buildings such as city or town halls, post offices, and fire stations played a central role in Vermont villages and downtowns. Their prominent location and design symbolized the importance of civic life, helped create a sense of place and permanence, and provided a direct link to community history. They also set a high standard for design, materials, and workmanship, for private sector development to follow.

But in recent years, style and design have been sacrificed to cut building cost, and many of our public buildings have been moved to decentralized locations. Rather than site a new school, community center, or industrial park in the middle of an undeveloped field on the outskirts of town, consider the use or reuse of vacant or previously developed areas in your downtown or village center.

“Growing smart” means making choices that conserve natural and financial resources, minimize waste, and create healthy environments for work and play. Your community can reinforce these standards with its public buildings by:

- making a commitment to keep public facilities and services downtown, as reflected in your comprehensive plan, official map, and municipal bylaws; and
- recognizing the value of quality construction and design for new public facilities that harmonize with existing structures and set a standard for others to follow.
- making more efficient use of public infrastructure—roads, water lines, sewer systems, electricity, telecommunications, and schools—and avoid the costs of expansion or duplication.
- reducing the pressure to develop outlying areas where valuable natural resources may be located.
- reducing reliance on automobiles, and increase accessibility for those without cars.
- preserving community heritage by reusing historic buildings in whole or in part. And,
- accommodating new growth without creating new impervious surfaces that increase stormwater runoff.

The first step is to create an inventory of the land and buildings your town owns. Over time, your town may have acquired a whole inventory of sites—through purchase, bequests, tax default, and/or property line adjustments. It is important to consider the present and future needs and potential use of these properties, so they can be properly managed, used, or sold to a new owner. Selling a property that your town can’t use may generate funds to acquire another property that better serves local needs.

A basic inventory of town-owned land and buildings identifies the name of each property, its location and land area, the size and condition of any structures present, whether it is served by public water and/or sewer, and uses both past and current. You might also compile a list of privately owned properties whose location or historic value to the community make them priorities for redevelopment.

Westminster: Making a Stand

The Town of Westminster has been working for almost two years to rehabilitate its town hall. This building, erected in 1889, houses the town offices, vault, a meeting room, and a ballroom. Town officials and residents are also engaged in a battle to keep their post office in its current location across the street from the Town Hall where the two buildings share parking.

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With these inventories in hand, you are prepared to review your options when the need for a new public space or facility arises. You can then apply smart growth principles—for example, by ensuring that on-site expansion is considered before new construction, and that your municipal investment supports the most efficient use of land and buildings.

Infill Development

Infill development is the creative recycling of vacant or underused lands and buildings within developed areas—such as downtowns, residential neighborhoods, village centers, and industrial parks. It can be accomplished by converting old buildings to new uses, or by filling in undeveloped space.

With infill development, issues like adequate parking and capacity for waste disposal are almost guaranteed to come up. To address parking problems, consider using on-street parking, or a nearby municipal lot. If on-site sewage disposal options are limited, Vermont’s new rules on alternative septic systems may come to your rescue. Consider adding second or third floors to existing structures, to accommodate new and additional uses.

Coventry, Manchester: New Life for Old Properties

In Coventry, the former village school and town hall have been renovated into apartments for elders with an enclosed common area. The project was completed by the Gilman Housing Trust in cooperation with the town, with funds from the Vermont Housing and Conservation Board.

In a highly visible project, the Town of Manchester “undeveloped” a paved-over car dealer’s lot and made it into a central town green with a large lawn, walking paths, and riverside shade trees. The project has eased congestion at the central intersection, and made the downtown business environment more attractive to pedestrians. The town purchased the lot and used federal transportation enhancement funds for its improvement.

School Facilities

What is the capacity and condition of your community’s school facilities? Where are they located? Beyond their everyday uses, what role do these facilities play in your community?

Schools serve an important central function in every community—especially in rural towns, which often have few other facilities for people to meet and enjoy recreation. Today, many communities that face decisions about expansion and/or renovation of school facilities are seriously examining the long-term benefits that centrally located sites and existing structures can offer.

“There is no better place to start fighting sprawl than with our schools,” says John Rahill, an architect specializing in school design. “No single building type has a greater density of occupants to add life to a community.”

Sometimes, the reuse of a centrally located building can actual reverse some sprawl development. “Big box” schools out in the countryside, surrounded by parking lots for the necessary cars, are being reconsidered. For example, the Town of St. Johnsbury is in the process of closing outlying elementary schools and consolidating them into a renovated downtown structure, instead of building a new structure in an outlying area.

Communities with village and neighborhood schools may have lower costs for bus transportation as more children can walk or bicycle to school. What’s more, finding new uses for an educational structure can reinforce the community’s sense of place, while preserving a piece of local history that connects residents of every generation.

Newbury’s Town-School Connection

When it came time to add school capacity, Newbury residents voted decisively to renovate their historic school and town hall, and to connect the two with an addition. Located on the village green, Newbury’s school is well-positioned as a focus for both family and community life. “The vitality of a small community is its school,” observed Marvin Harrison, a member of the Newbury School Board.

Those wishing to renovate or add capacity to an old school building may face an uphill battle. Short-term costs for materials—like bricks that stand the test of time—may well be greater. But older buildings themselves often demonstrate how craftsmanship and solid, long-lasting materials can be more economical in the long run. Reusing an existing school site or building can be accurately portrayed as an investment in your community’s downtown or village center—one that helps maintain the value of surrounding properties and businesses.

State law requires that a community exhaust all other possibilities before resorting to new construction—and according to the Vermont Department of Education, very few new schools are being built in the state. The vast majority of state funding for school construction, which pays up to 30 percent of total project costs, assists with additions and renovation of existing facilities. The Education Department encourages the use of historic properties. There are no minimum acreage requirements for schools in Vermont, as long as local zoning requirements are observed. Some communities have been able to meet the Department’s standards for recreation fields by using town recreation land.
The Post Office Community Partnership Act, introduced in the U.S. House and Senate in May 2001, provides for meaningful community input into the closing, consolidation, relocation, or construction of a post office, and requires the Postal Service to comply with local zoning, land use, environmental, and historic preservation laws. For more information go to www.planning.org/GoVT/stamppoutsprawl.

General

USDA Rural Development is a source of technical assistance and grant money for communities. Third Floor, City Center, 89 Main St., Montpelier, VT 05602: 802 828-6010.

The U.S. Army Corps of Engineers, New England District, is a source of technical assistance for communities. 696 Virginia Road, Concord, MA 01742-2751: 978 318-8220.

Making Public Investments in Downtowns & Village Centers

What are the qualities that make a downtown or village center an appealing place for residents, businesses, and visitors? What is the role of public investment in promoting those qualities? What are the true costs and benefits associated with a vibrant downtown or village center for your community?

Why Should Your Community Invest In Its Downtown?

Vermont’s downtowns and village centers serve a variety of functions that, within our own towns, we too often take for granted. They provide a sense of place and they symbolize the community’s economic health, quality of life, pride, and history for current and potential residents, businesses, and visitors. A vital downtown provides a home for budding entrepreneurs and small businesses, along with jobs and services for community residents—and it strengthens the local tax base.

Resources

Infill Development

The Retrovest Companies is a real-estate development group specializing in residential infill, urban redevelopment, and adaptive reuse based in Burlington, Vermont: www.retrovest.com.


Schools


Vermont Department of Education, Policy on Historic Preservation of School Buildings, Montpelier, VT.

Post Offices

A Local Official’s Guide to Developing Better Community Post Offices provides effective strategies for keeping post offices downtown. The guide is $10 per copy, plus $3 for shipping. Preservation Trust at 802-658-6647. The booklet is also posted at www.ptvermont.org/popreface.html.

Church Street, Burlington, Vermont
A downtown or village center creates community by providing a setting for casual interaction, civic engagement, and cultural events. It is a place where people meet face-to-face, and greet each other by name. Public investment in your downtown or village center is a vital piece of your community’s smart growth strategy.

Public investment will result in public improvement—but not necessarily, by itself, in a vital downtown. Your community’s investment decisions must be part of a comprehensive strategy that involves both public and private partners in designing, developing, and maintaining a functional and attractive center, a healthy economic climate, effective promotion and marketing, and an ongoing organizational structure dedicated to downtown vitality.

**Bennington’s Successful Strategy**

Better Bennington’s approach to downtown revitalization includes a design assistance program, a parking task force to design and implement a comprehensive parking plan, maintaining a downtown space inventory and promoting the reuse of historic buildings, business retention and recruitment, marketing and promotion using special events, and providing the structure and coordination for implementation of the downtown revitalization strategy.

Local government supports the initiative by administering a special assessment district, whose revenues pay for improvements and events. The Town of Bennington provides direct financial support, by allocating tax dollars to street improvements and cultural programs and providing matching funds for enhancement grants. To learn more, contact the Better Bennington Corporation at 802-442-5758 or betterbc@sover.net.

**Traffic Calming**

The principle behind traffic calming is to ease the pace and intensity of vehicle traffic, so that other users can share the public right of way in comfort and safety.

In European countries, area-wide traffic calming has reduced traffic-related injuries by an average of 53 percent—and has given pedestrians, bicyclists and children as much right to use residential streets as cars. Many U.S. communities turn to traffic lights or stop signs to control traffic—but these conventional measures are not always reliable or effective in situations that involve pedestrians. Drivers tend to speed up as they approach an intersection with a green or yellow light, making it less safe for pedestrians. In contrast, calming measures—such as narrowed streets, on-street parking, traffic circles or roundabouts, and speed bumps—are self-enforcing and can be designed to guide drivers to the desired speed.

Improvements aimed at traffic calming must be incorporated into an overall plan for mobility and traffic circulation throughout your community. In the section “Planning and Acting for Smarter Mobility,” we note some street-alteration techniques to improve safety for walkers and bicyclists. In a downtown or village center, these alterations can and should include attractive landscaping, effective lighting, and well-placed green spaces to encourage both vehicle and pedestrian travel.

A subtle way to gain greater control over downtown traffic is to create or expand on-street parking. Drivers reduce their speed to accommodate vehicles parking or pulling out, and the parked cars provide a buffer between pedestrians and moving traffic. Angle parking works even better than parallel parking for this purpose, and can accommodate more cars. This approach has worked well in downtown St. Albans and Burlington.

Another subtle approach is to increase the number of street trees. This creates the perception of a narrower street, and tends to slow drivers.

Finally, on low traffic streets, you can simply narrow a street to a single lane, where one driver must wait while another passes.
Sidewalks

Which areas of your community are connected by sidewalks? Which are not? Who decides where sidewalks are constructed? What is the condition of your sidewalks—are they safe, appealing places to walk? Do you have a plan for sidewalk construction and maintenance?

For the last 40 years of road construction, sidewalks have been regarded as a footnote. But if you want your downtown or village center to be a vibrant place, sidewalks must take their rightful place as an integral piece of your community’s transportation network.

Sidewalks should be sited, designed, and maintained with pedestrians in mind. Richard Untermann, a planning consultant, identifies these additional general principles:

• Sidewalks should be continuous, relatively uniform, and firm enough for wheelchairs and baby strollers.

• Sidewalks should be wide enough to allow three people to walk abreast. They should be wider in areas where they provide access to businesses and offices.

• To improve both actual and perceived safety, sidewalks should be separated from traffic by landscaping or parked cars.

• Sidewalks should be lit for night safety.

Where walkways cross streets, the crossings should be well-marked and include wheelchair ramps. The timing of traffic signals should be sensitive to waiting pedestrians. Research shows that after 20 seconds, pedestrians begin to jaywalk.

Review your community’s curb-cut policies for their effects on the pedestrian environment. A wide curb cut that allows vehicles to enter and exit at high speeds can be just as dangerous for pedestrians as an intersection. Smaller curb radii slow traffic down on curves, and create less distance for pedestrians to walk. Controlling the location of curb cuts is critical to promoting pedestrian activity. Multiple curb cuts within a short distance can virtually eliminate the utility of a sidewalk.

It is not enough to install sidewalks. They must be maintained as well. Sidewalks with cracks, bumps, and overgrown vegetation are unsafe and uninviting.

Lighting

Does your community have street lights? What kind of lights are they? Are they appropriate for the setting?

Lighting is an important factor in the comfort of those who use your community’s streets and public spaces. Studies show that people like to walk at night where there are other people, attractively lit buildings, and colorful vegetation.

Smart public investments in lighting must be complemented with provisions in your zoning bylaws to ensure efficient and effective lighting of private spaces, and by specifications in your subdivision regulations that regulate the lighting of new streets built by developers. Both public and private investments in lighting within your community should reflect goals clearly articulated in your comprehensive plan.

In making decisions about public investment in lighting, important considerations include:

Where and when to light. Some areas, especially in rural communities, are best left dark, so the night sky is visible.

The quality and color of light. Harsh or glaring light, or light that gives the surroundings an unfamiliar color, discourages public use.

Brightness. People associate over-lit streets with high-crime areas. Light that falls evenly, and allows pedestrians to easily distinguish the appearance of their surroundings and approaching strangers, creates a more comfortable and inviting evening streetscape.

Cost and efficiency. Municipal lighting decisions should be made according to a life-cycle analysis that considers the initial purchase and installation cost, along with annual operating costs—including electricity use and maintenance.

Street Trees

Who is responsible for the trees along the streets and in the parks and public spaces in your community? Is there a long-range plan for planting, care, and replacement? Has anyone considered the range of benefits provided by trees and landscaping features, in relation to their costs?

A growing body of research documents quantifies the benefits of maintaining trees and forests in public settings. Among the benefits most commonly recognized are:

• Easing air and noise pollution,

• Improving the climate,

• Sequestering carbon dioxide,

• Saving energy, by reducing needs for heating and cooling,

• Reducing stormwater runoff and associated sewer and flooding costs,

• Increasing real-estate and property values,

• Improving neighborhood cohesion, and

• Increasing people’s sense of well-being—which has positive impacts on retail sales and on recovery rates from illness.

By the judicious use of street trees, you can calm and quiet traffic in residential areas, encourage the use of certain routes through your community, and increase interest in your commercial district. A national study conducted by the University of Washington investigated public perceptions about the role of trees in revitalizing business districts. In districts that had street trees and other landscape improvements, consumers rated business district amenity and comfort 80 percent higher, and the quality of products 30 percent higher.
Elements of a plan for your community's street trees include an inventory and assessment of existing trees, including health, age classes, species, and site conditions; and a schedule with priorities and budget for planting, maintenance, and enhancement.

Rutland: Tree Nursery

The City of Rutland maintains a tree nursery to provide ornamental trees for municipal planting. The nursery and planting program serve as a training arena for high school students from the Stafford Technical Center's Forestry/Natural Resources Program. The city also has a municipal tree ordinance governing public shade trees.

Parks

What do you know about the arrangement, size, and design of the public open spaces in your community’s downtown or village center? How are these spaces used, and by whom?

What makes a local park an important place that will capture the hearts of local residents? A study by the Urban Parks Institute found that a “good place”:

- provides a range of things to do;
- is easy to get to, and connected to the surrounding community;
- is safe, clean, and attractive; and, perhaps most important,
- is a place to meet other people.

The neighboring residents who will use a park are the most important experts. They should be consulted early and often—and, to the extent possible, they should be involved as partners in design and construction.

Public spaces are complex and dynamic; they rarely emerge whole and perfect at the first attempt. Communities should experiment with short-term improvements like plantings, community gardens, and murals that can be tested and refined over many years.

Create a network of connected public spaces that radiate from a large green at the center of your downtown or village, through smaller, pocket parks in neighborhoods, to more expansive rural open spaces.

Use smaller parks to:

- Buffer the undesirable effects of competing land uses.
- Provide attractive links between buildings, parking areas, commercial, residential, and public areas.
- Increase the value of adjacent properties.
- Provide both visual and physical access to water. Many towns and villages were originally sited on the water, and now are oriented away from it. Parks can rediscover this very valuable resource.
- Offer amenities for all ages—such as fountains, game tables, picnic space, play space and structures, a band shell, a community garden.
- Encourage lingering. People who spend more time are likely to spend money as well. Add benches for people-watching, resting, and waiting. Avoid loitering and obnoxious public behavior by planning for adequate maintenance and management, and by promoting active use of the parks through a variety of planned and unplanned activities. Provide sites for community events.

Irasville Town Green, Waitsfield

The section in this guidebook on open space planning provides a number of ideas about how to identify and plan for community spaces such as downtown parks.

Parking

How many cars and other vehicles park in your downtown or village center on a regular basis? During peak periods? overnight? For deliveries? Where do employees park? How many parking spaces do you have and where are they? Based on your desired rate of growth, how much parking will you need? How are you determining that need? Does your community have a plan for providing parking that includes private as well as public investment?

One of the keys to a vital downtown or village center is to provide amenities for all types of traffic—including motor vehicles—so that they complement one another. It is essential to provide safe, convenient, and diverse parking options. Consider parking as an incentive for motorists to stop, get out, and walk your downtown.

Diagonal parking and wide sidewalks separate pedestrians from moving vehicles.
Some guiding principles:

- On-street parking provides a buffer for pedestrians and spaces for quick stopping. Motorists who see a storefront or activity that interests them can immediately pull over and park. For wider streets, diagonal parking will accommodate more spaces than parallel parking.
- Review the on-site parking requirements in your zoning to ensure there is enough flexibility for downtown property development. Do you lower the standards for shared parking among several properties? Do you lower the standards where transit and pedestrian activity is high? Do you lower the standards when adequate municipal parking is available? (For more on zoning for parking, see Community Rules: A New England Guide for Smart Growth Strategies by the Vermont Forum on Sprawl and the Conservation Law Foundation.)
- Use strategic municipal investment to create parking facilities to serve the sites you’d like to see developed. On your official map, indicate sites for future parking facilities.
- Make sure parking for residential uses is integrated into your plan. Consider allocating public parking spaces for upper-floor apartments in your commercial district, especially at night during the winter months.
- Provide off-site parking and shuttle service for business employees, so that downtown spaces can be reserved for customers and residents.
- Include in your parking plan temporary and longer-term parking for delivery vehicles serving downtown businesses.

Incentives for Town Center Buildings and Activities

What is the role of local public investment in establishing and/or maintaining an attractive, functional and inviting built environment in your downtown or village center? What incentives does your town offer to encourage the use of vacant or underutilized sites and buildings in settled areas?

It is often well-advised and effective for a community to invest in keeping non-municipal public facilities, such as theaters, museums, and sports facilities, downtown.

Rutland: Historic Paramount Theater

The City of Rutland took an active role in the recent reconstruction and renovation of the historic Paramount Theater, which now brings many people downtown for cultural events. The city contributed financial and administrative support to supplement state, federal, and private investment.

Your community can also shape the built environment of the downtown or village center by directing loan funds toward desired uses and design, and by actively engaging in the restoration of historic structures. Communities can provide direction and lay the groundwork for other public and private investors by small grants for feasibility studies and assessments. These can support the restoration and reuse of existing structures, and/or the construction and design of new structures in the desired locations.

Some additional tools and ideas:

- **Create a downtown development authority** to coordinate technical and financial support.

Rutland: Redevelopment Authority

To promote downtown revitalization and economic development, the City of Rutland created the Rutland Redevelopment Authority, funded by an annual appropriation. The Authority organized and now administers a Special Benefit District, which uses the proceeds of a surcharge on property taxes in the downtown commercial area for marketing, maintenance, security, and streetscape amenities.

- **Provide seed money and support** for private projects. Some Vermont communities have developed local revolving-loan funds or loan pools in partnership with local banks. The funds are distributed according to guidelines that reflect local priorities for design, location, and function. The Vermont Community Development Program is one source of financing for a local revolving loan fund.

- **Offer property tax relief** for responsible development or redevelopment of properties in your downtown or village center.

- **Get your community’s town center approved as a “designated downtown.”**

Mixed-Use Development

The vitality of your downtown or village center depends on mixed uses. National studies and Vermont polling data report a growing interest among people in living where businesses and services are within walking distance. Including second-story housing options in your commercial district makes building rehabilitation more economic, deters crime, and increases the market for convenience-oriented businesses.

Funding for rehabilitation and/or creation of affordable housing is available through both the Vermont Community Development Program and the Vermont Housing and Conservation Board (see Resources). Projects in designated downtowns have access to special downtown funds that have been targeted to the reuse of upper floors. To access these funds, it is vitally important that the municipality be fully behind these projects.

Brownfields

Does your downtown or village center have any vacant, or underused, contaminated sites? What is the development history of these sites? How much tax revenue is your community losing through their abandonment? Can reusing these sites contribute to infill development in your community? Does your town offer incentives to private developers for brownfield redevelopment?

Sometimes there are good reasons why vacant and underused sites persist in town and village centers. The key inhibitor to new uses may be site constraints, such as steep slopes or poor soils; it may be regulatory obstacles, or market conditions; or an absentee owner may simply be unaware of development opportunities. It may also be due to real or perceived contamination of the site by previous uses.

Sites of real or perceived environmental contamination are called brownfields. If not carefully cleaned up and managed, brownfields can represent a health threat to communities.
Superfund sites are brownfields that have been identified as having toxic contamination. As of August 1997, Toxic Alert listed over 120 Superfund sites throughout Vermont. Eleven Vermont sites are on the current EPA list of national priorities. Along with the Superfund sites, there are many hundreds of abandoned or underused sites with lower levels of contamination.

The two most-cited obstacles to brownfield redevelopment are availability of funds and concerns over liability. Additional obstacles faced by rural communities include lack of staff and technical expertise, and lack of public awareness.

When it is safe to do so, cleaning up and reusing brownfield sites—rather than spreading new development out to “greenfields”—can strongly promote smart growth. Often, too, these sites are in areas with other concentrated development, such as downtowns or industrial parks.

Your community can promote the redevelopment of brownfields by accessing services and funds from both state and federal agencies. Properties within a designated downtown within the Vermont Downtown Program are eligible for tax incentives toward redevelopment. Grants to a municipality from the Vermont Community Development Program can be used for redevelopment.

In 1998, Vermont’s Redevelopment of Contaminated Properties Program expanded liability protection to current owners of brownfield sites, and initiated a five-site pilot program. The pilot caps a prospective purchaser’s share of cleanup at 130 percent of the cost estimate in state-approved corrective action plans.

Residents in Cavendish celebrate the opening of their new town green.

What If Your Community Doesn’t Have a Downtown or a Village Center?

Recognizing the important role of centralized, compact development and central public spaces, many communities have used municipal investment in combination with state, federal, and private funds to develop a downtown or village center.

In 1997, the Town of Cavendish (population 1,400) matched federal transportation funds and Vermont Housing and Conservation Board dollars with more than $53,000 to create a green in the Village of Proctorsville. The new green—in effect a village center, with trees, bike racks, sidewalks, an amphitheater, and a bus stop—is on the site of a burned building that had marred the landscape for over 15 years.

Resources

Downtown Designation and Assistance: The Vermont Downtown Program offers technical assistance and training, as well as a resource library with publications, newsletters, videos, and slide shows. Upon receiving downtown designation under the Downtown Development Act, communities are eligible for benefits that include technical assistance, tax credits, grants, and loans from various state agencies. To qualify, communities must develop a comprehensive revitalization strategy for the downtown district, and demonstrate broad-based support for their strategy. Contact Joss Besse at 802-828-5212 or jbesse@dca.state.vt.us, or Jane Lendway at 802-828-3042 or jlendway@dca.state.vt.us.

The Vermont Community Development Program provides financial and technical assistance to municipalities in housing, economic development, public facilities, and public services. Contact the Vermont Department of Housing and Community Affairs, 802-828-3211, or visit www.state.vt.us/dca/housing.

Pedestrian Improvements: Streets for People: A Primer for People Who Want Quieter, Safer, Friendlier Neighborhood Streets is available for downloading from Transportation Alternatives at www.transalt.org.


The Canadian Guide to Neighborhood Traffic Calming, published by the Transportation Association of Canada and the Canadian Institute of Transportation Engineers, is available for $100 (about $65 U.S.) from TAC. Phone 613 736-1350, or visit www.tac-act.ca.

Street Trees: For assistance, contact the Urban and Community Forestry Program of the Vermont Department of Forests, Parks, and Recreation: 802 241-3673 or streettrees@anr.state.vt.us.

See also, Burlington Parks and Recreation Department, Street Tree Planting Plan, Burlington, Vermont 802 865-7247.

Outdoor Lighting: The Outdoor Lighting Manual for Vermont Municipalities, available from the Chittenden County Regional Planning Commission, provides assistance with lighting considerations and standards for both public and private areas.

Affordable Housing and Land Conservation: The Vermont Housing and Conservation Board provides grants and loans to nonprofits, municipalities, and state agencies to create affordable housing and conserve land. 802 828-3250, www.vhcb.org

The Urban Parks Institute provides resources for planning and developing urban (downtown) parks at www.urbanparks.pps.org.
**Downtown Preservation and Revitalization:** The Preservation Trust provides technical assistance and funding to help Vermont communities preserve and use historic resources, including buildings, the cultural landscape, and downtowns and village centers. Contact Paul Bruhn, Preservation Trust, 104 Church Street, Burlington, VT 05401, 802 658-6647 or pbruhn@ptvermont.org; or visit www.ptvermont.org.

The Vermont Division for Historic Preservation offers planning assistance, public education and information, surveys and inventories of historic sites and structures, investment tax credits, historic preservation grants, and project review services. The Division's Web site offers a list of sources for funding and financial incentives for historic preservation projects. Contact the Division at 802 828-3045, or visit www.uvm.edu/~vhnet/hpres/org/vdhp.

The Certified Local Government Program provides technical assistance and small matching grants to communities for protecting local historic places. Contact the Vermont Division for Historic Preservation at 802-828-3047 or visit www2.cr.nps.gov/clg/.

The Transportation Equity Act of 1998 (TEA-21) is a generous source of funding for community projects ranging from landscaping and scenic view protection to historic preservation, trail construction, and pedestrian and bicycle paths. Contact the enhancements program coordinator, Vermont Agency of Transportation: 802 828-3885.

**Brownfields:** For information on Vermont, contact Sites Management Section, Hazardous Materials Management, Vermont Department of Environmental Conservation: 802 241-3491 or www.anr.state.vt.us/dec/wmd.htm.

Information on the full range of federal programs is available at the Environmental Protection Agency’s brownfields Web site: www.epa.gov/swerosps/bf.


The International City/County Management Association has published *Putting the Pieces Together: Local Government Coordination of Brownfield Redevelopment,* targeted toward local governments and private sector partners in brownfields programs. Contact ICMA, 777 North Capitol Street, NE, Suite 500, Washington, D.C. 20002: 202 289-4262.

The EPA Brownfields Technology Support Center provides information on strategies to streamline assessment and cleanup, along with evaluation of technologies options, contractor capabilities, and demonstration planning. Contact the toll-free hotline: 1-877-838-7220.

EPA Hazardous Substance Research Center, Technical Outreach Services for Communities: 1-800-227-8917.

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**Investing In Open Space—Your Community’s “Green Resource”**

What does the term “open space” mean to you? To others in your community? What different types of open space are in your community? What functions do different types of open space serve? Which of these functions are worthy of community investment?

Just as your community makes choices about which areas are most appropriate for different types of development, you can also choose to protect and enhance important community values and functions by keeping some land free from development.

In fact, with good planning and smart investment, your community can provide a network of green spaces—safeguarding access to places that are important to local residents, lessening the many municipal service expenses that accompany scattered development, bringing economic benefits to property owners and businesses, and helping preserve your community’s vital sense of place.

Open space planning should have a prominent place within both your comprehensive planning process and your capital budget and program. Being clear about where you don’t want development to occur, and why, enables you to concentrate growth more effectively in places that make sense.

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**Burlington: from Idea to Action**

Recognizing both Burlington’s role as a regional growth center and the value of open space conservation for residents, property owners, visitors, and businesses, Burlington adopted an Open Space Protection Plan in 2000 that contains three main components: A vision for integrating natural areas, parklands, and green belts into the urban fabric; a working inventory of open spaces and their important attributes, to guide the prioritization and protection of sites; and a plan of action that employs three complementary approaches: conservation education, proactive conservation with mechanisms and resources to protect land, and further planning and improved development review. The city is now examining options for a land conservation fund.

**Functional Open Spaces**

Thoughtful planning and action can create an integrated network of large and small open spaces, with connecting corridors, to provide the mix of recreation opportunities, conservation areas, and scenic places that community residents value.

These are some of the functions that open space may be able to serve in your community:
• Natural resource protection—habitat, stream banks and corridors, wetlands, rare and endangered species or places, water resources.
• Outdoor recreation—including active uses such as playgrounds, ball fields, beaches, trails, and community gardens and more passive ones such as landscaped islands, parks designed for sitting and lingering, arboretums or demonstration gardens, and scenic vistas.
• Resource management—farmland, forests, fisheries, and gravel and sand deposits.
• Protection of public health & safety—flood plains, steep slopes, highwater tables, shallow depth to bedrock, geological hazard areas.
• Shaping community character and design—buffer strips, pocket parks in downtown, village greens, greenways.
• Protection of historic or archeological sites—historic structures and grounds, historic districts.

Basic Steps in Developing an Open Space Plan
(Adapted from material by Jim Gibbons, Land Use Specialist, University of Connecticut Cooperative Extension. See Resources for the complete reference.)
1. Conduct a natural resource inventory of open spaces— including land already protected, unprotected land currently used by the public or desirable for public use, unique or fragile resources, and areas unsuitable for development.
2. Identify community open space needs; hold public meetings.
3. Categorize open spaces by function.
4. Organize identified sites into a connected network.
5. Develop objectives, clearly stating your community’s intent and direction for open space protection.
6. Use your objectives to prioritize areas for purchase and/or conservation.
7. Develop a financial plan, based on how the land will be conserved. Each parcel should be categorized by the way it can best be preserved—by regulation, purchase, donation, conservation easement, or other means. Include potential funding sources.
8. Create an information file on each identified parcel, including ownership and unique features.
9. Before the general public sees the plan, contact identified landowners to discuss the inventory and plan.
10. Conduct public forums to generate broad community understanding and support for the plan and its implementation.

Fiscal Costs and Benefits of Open Space Conservation
What fiscal benefit does your community get from land that is already protected from development? What are the municipal costs generated by protected local properties, including trails?

Charlotte: Funding Conservation
Several years ago, the Town of Charlotte created a map of protected lands, including state-owned properties, those with conservation easements, and those protected by private conservation organizations. By adding $.02 to local property taxes, Charlotte became one of the first communities in Vermont to create a municipal conservation fund to increase the inventory of protected properties. (Some other communities are East Montpelier and Shelburne.)

How many of these properties remain on your Grand List? Does your community provide services to protected properties? In contrast, what services does it provide to residential properties? To commercial and industrial properties?

Our property tax system supports the concept that development is the “highest and best use” of land. But development can sometimes cost your community money, by requiring that infrastructure be extended, a wide range of services be provided, and environmental and public safety issues be addressed.

A series of studies conducted by the American Farmland Trust and others have shown that open land consistently generates more tax revenue than it requires in services. Residential development costs more to service than it generates in revenue, while the public costs associated with commercial and industrial development vary depending on their direct demand for services and the residential growth they generate.

There is now substantial documentation showing that conserved land, trail corridors, and greenways:
• increase real property values in the immediate area;
• enhance market size and local revenues for small businesses;
• build tourism; and
• reduce the cost of providing public services and facilities.

Conserved properties are not always removed from local tax rolls. This depends on the degree of protection and the specific conservation method used to achieve it. According to the American Farmland Trust, Massachusetts towns that have protected the most land enjoy, on average, the state’s lowest property tax rates.

Ultimately, your community needs to balance the benefits, both tangible and intangible, that you hope to receive from preserving open space with the real costs to taxpayers.

Can Your Town Afford Not to Invest in Conserving Land and Resources?
Much has been written elsewhere about protecting agricultural land, trails and greenways, and urban open spaces—but less attention has been given to some of the more utilitarian and expressly rural issues involved in open space protection. In this section, we highlight a few of these.

Water Source Protection
Does your community have a plan for protecting water sources? What land uses are compatible with water source protection in your community?

Most of Vermont’s rural communities rely on individual private wells and/or local community water systems for their drinking water. There is a close relationship between the quantity and quality of our water resources and surrounding land uses. Keeping water clean—especially through watershed conservation—is almost always cheaper than cleaning it up.

Vermonters have benefited from an abundance of high-quality drinking water. But as our population grows, protecting this resource is becoming more difficult. A source protection plan is the most effective way to protect water systems in your community. The plan identifies drinking water sources and the corresponding recharge areas. Protection efforts focus on the ownership and use of land within the source protection area.
Flood Plains

Where are the flood plain properties in your community? Are these properties developed? Are they protected?

Communities across the nation are learning that building in floodplains invites disaster. Expense piles upon expense as residents and businesses demand costly drainage improvements, flood control projects, flood insurance, and disaster relief.

A protected floodplain contains no developed property, and acts as a permanent “flood absorber” that limits destruction to developed areas downstream. Protected floodplains also create economic benefits by providing open space for recreation, wildlife habitat, and farming. A protected floodplain that doubles as a wildlife refuge or recreation area may attract hunters, bird watchers, and other tourists to your community.

Geological Hazard Areas

What geological hazards exist in your community? What land uses are currently taking place on steep slopes? What kind of rock formations underlie the source of your groundwater?

Land prone to landslides or riverine erosion, and areas where groundwater is unsuitable for drinking, are an emerging concern in Vermont communities. Recent landslides in Jeffersonville, Windsor, and Georgia have threatened public safety, devalued private property, and raised issues about public liability. In some parts of the state, high levels of naturally occurring radiation and arsenic discovered in water from private wells has further attracted the attention of property owners and public officials, and has raised questions about whether additional areas should be protected from development. The Vermont Geological Survey is working to provide interested communities with maps and technical assistance.

How Should Your Community Invest in Open Space?

Some excellent publications are available that describe the various levels of protection for open space, and the tools for achieving them. Also, a number of public and private agencies are devoted to land protection, and can help you with both funding and technical assistance.

An important first step is to invest in providing local administrative support to coordinate the efforts of volunteer groups, handle paperwork, and help build relationships with collaborators.

Following are a few resources to get you started.

Municipal Forests

In 1915, Vermont gave towns legal authority to acquire, manage, and improve lands for wood and timber, and created a special category of forests that generate revenues to support local schools. Today’s Vermont includes nearly 120 municipal forests, over 42,000 acres. Some of them are highly managed and productive, some are used for recreation and education purposes, some protect watersheds—and some are waiting to be rediscovered.

Morristown, Calais and Starksboro: The Value of a Town Forest

In 1968, Morristown purchased 350 acres to buy out landowners in a remote corner of town where steep roads were subject to frequent washout. Now the local conservation commission is working to purchase an adjoining 300 acres, to add to what has become the Morristown Municipal Forest.

The Town of Calais owns a 188-acre forest that had not been actively managed for years. The Calais Conservation Commission recently began a selective harvest of mature and low-grade wood. Town residents then voted to invest all of the $16,500 profit from the sale into the Calais Conservation Fund, “to help protect the town’s working landscape and natural heritage.”

With funding from Vermont’s Urban and Community Forestry Program, the Starksboro municipal forest board is developing a plan for managing the 400-acre municipal forest. The plan calls for recreational and education uses, as well as timber management. The forest board recently negotiated with the municipal library to provide wood for shelving. A forester and 30 sixth-graders went to the woods, talked about selective harvest, and chose the trees to cut for the shelves.
Greenways and Recreation Access: The National Park Service’s Rivers, Trails and Conservation Assistance (RTCA) program offers staff assistance and consultation to communities on developing greenways to link community resources, providing water access and corridors, restoring cultural and historic assets, recycling abandoned railways into trails, and preserving open spaces. The program has compiled a publication, Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors. Contact the RTCA at Marsh-Billings-Rockefeller National Historical Park, 54 Elm Street, P.O. Box 178, Woodstock, VT 05091, 802 457-3368.

Water Source Protection: Public community water systems are eligible for low-interest loans for purchasing land or development rights from the Vermont Drinking Water State Revolving Fund. Contact David Allerton or Tom Bartholomew at the Agency of Natural Resources: 1-800-823-6500.

Conservation Lands and Easements: The Vermont Land Trust, a private, non-profit land conservation organization has information about different types of conservation tools and assists in working with individual landowners: 1-800-639-1709.

The Vermont Housing and Conservation Board provides grants and loans to nonprofit organizations, municipalities, and state agencies to create affordable housing and conserve land. The Board has a special local conservation project category for funding. Contact Paul Hannon: 802 828-3250, www.vhcb.org.

Municipal Forests: The Vermont Urban and Community Forestry Program provides funding and technical assistance for planning and caring for community trees. The “Trees For Local Communities” cost-share program offers funding for planning education, planting, and maintenance of forested landscapes. Contact Steve Sinclair, Vermont Department of Forests, Parks, and Recreation: 802 241-3674.

The Vermont Forest Legacy Program provides funding to support the continuation of traditional forest uses in specified areas of the state. Land must support traditional uses, be threatened by conversion to non-forest use, and possess important public value. Contact the Vermont Department of Forests, Parks, and Recreation: 802 241-3670.


Planning and Acting for Smarter Mobility

Where do the people who live in your town go to work, to shop, to play, to receive health care, to get an education? What portion of these trips take place within your town? What choices, other than cars, do people in your town have for travel?

How we choose to meet our needs for mobility is central to nearly every aspect of smart growth—from maintaining historic settlement patterns to protecting and preserving environmental quality and the working landscape. Where new roads are located, how they are designed, and how they are maintained over time will influence future growth in the community. Investments in ride-sharing, village telecommunications, and walking and biking will affect mobility within the town and to other communities. Altogether, these decisions—and their influence on our use of the automobile—will have a critical impact on the fiscal, social and environmental health of the community.

Road Design

What is the desired roadway pattern for our town? How can we integrate growth in our village centers with a traditional pattern of interconnected roadways? What can we do to increase the interconnectivity of roads outside town centers? Where should roads be built to accommodate growth? Are we prepared to designate roadless areas in our town? Are we prepared to close roads or restrict development along roads that endanger areas we want to protect? What is the appropriate design for each of our roadways? Are there roads in our town that need to be narrowed ... or widened? Are there roads we should pave, or whose pavement we should remove? How do we want to manage our class 4 roads?

This section covers six aspects of roadway design: pattern, location, widths, paving, scenic roads protection, and use of class 4 roads. Each of these can significantly influence smart growth in Vermont communities.

Pattern

Roadway patterns are an essential element of maintaining the historic settlement patterns of compact villages separated by rural countryside. Within the settled heart of some of our towns and villages, the roadways follow a grid-like pattern, with interconnecting roads dividing streets into relatively short blocks. Other towns grew in a linear pattern, along rivers with steep slopes behind.

Unfortunately, more recent development often features roadways that are unconnected with one another, housing developments built around separate cul-de-sacs, and commercial development along linear strips that extend farther and farther from the center of town. As the distance between
housing and services increases, so does our dependence on cars, response times by emergency vehicles, and the extent of school bus routes and police patrols.

Within town centers, smart growth extends the traditional pattern of a street network by interconnecting new roads with the old. Outside the village, other settled areas are served by a system of arterial (through) roads and local streets. How these streets are located, designed, and managed can dramatically influence the course of development.

In considering the pattern of roads, municipal officials need to identify the mobility needs associated with back roads. To what extent do back roads serve as alternative routes to arterial roads? Is this desirable? To what extent will development on back roads be limited? What level of service does the town wish to provide for back-road residents?

Many Vermonters want to live in the country—yet they also want to limit sprawl. Municipalities can create incentives to live in higher-density settlements by defining the level of services they will provide to back-country residents. Road maintenance is one of the key services in this regard. (For more on the concept of a Rural Services Policy, see page 26.)

**Location**

Where a community locates its roadways determines which areas of town are accessible for present and future development. Yet in many Vermont communities today, roadways are not located according to any master plan. As long as developers are willing to pay for road construction, communities often allow them to put a road or road segment wherever they wish.

It’s important to carefully consider the location of new roadways, and ideally to build these decisions into the community’s long-range development plan. These decisions should take into account local desires to direct development and protect prime agricultural and forest land, open land, and scenic and water resources, including wetlands.

**Road Widths**

The width of a roadway has a surprisingly powerful influence—both on motorists and on the character of a neighborhood. People tend to drive faster on wider roads and in wider lanes, and more slowly on narrower roads. Wide roads are more difficult for pedestrians and bicyclists to cross—because traffic is faster, and the distance to cross is greater.

Our typical response to growth and resulting traffic congestion is to make roads wider. However, recent research suggests that widening roads just triggers more traffic and congestion. What’s more, based on analysis of 60 cases worldwide, a British team found that where roads have actually been closed or their capacity severely reduced, an average of 20 percent of the former traffic disappears entirely.

“The most important features of city planning are not the public buildings, not the r.r. approaches, not even the parks and playgrounds. They are the location of streets, the establishment of block lines, the subdivision of property into lots, the regulations of building, and the housing of people. And yet, the fixing and extension of these features is too often left practically without effective regulation to the decision for private individuals.”

JOHN NOLEN
Nolen’s Madison, A Model City, 1911

If towns are to change auto-dependent patterns of growth, and to make neighborhoods and commercial areas more accessible by walking and biking, one place to start is in planning for narrower roads. Flexibility is key. Rather than assuming the need for a uniform width along a road’s entire length, consider varying the width according to use.

While it is obviously important to consider safety in roadway design, municipal officials should know that communities in Vermont cannot be held liable for accidents that occur on town highways, unless the accident is related to the condition of a bridge or culvert. So restricting road width does not, by itself, increase a town’s liability.

**Narrow Streets and Emergency Responders**

Concern for emergency vehicle access understandably influences decisions on road width. To address the concerns of emergency responders, Dan Burden, the director of Walkable Communities, has produced a video and guidebook for municipal officials.


**Paving**

Vermont select boards are increasingly faced with decisions about whether to pave dirt or gravel roads. While we know of no Vermont studies which show that paving increases road use and travel speed, experience suggests that this is the case. We do know that road paving can increase the cost of road maintenance.

A rural road in Huntington

The state pays $130,000 to $300,000 per mile to resurface paved roads. Road engineers disagree about the traffic volume over which paving is a more economical solution. Some put the figure as low as 500 vehicles per day, while others recommend paving only at volumes over 1,000 vehicles per day.

At present, some Vermont towns pave dirt roads without notifying residents, while others offer a warning. We encourage towns that are considering paving dirt roads to involve the public in the decision-making process.

**State and Town Scenic Roads**

In 1977, the Legislature enacted Act 58, the Vermont Scenic Highways Law, “to preserve through planning the scenic quality of [Vermont’s] rural landscape.” This law gives town officials the authority to designate specific town-owned routes as scenic roads in order to protect their character.
Scenic road designation by towns is entirely voluntary. When a town decides to take advantage of the law, local citizens must inventory town roads and identify the qualities that make them scenic. A rationale for designation of specific roads must then be developed.

Once a road achieves scenic designation, subsequent maintenance and reconstruction must comply with standards set by the Transportation Board. Routine maintenance projects must not significantly change the condition of the road as it existed at the time of designation. Material changes in width, alignment, surface grade, elevations, and locations of ditch lines and roadway surface are prohibited.

Class 4 Roads

Class 4 roads are a significant municipal asset, because the town owns the rights of way associated with these roads. There are approximately 1,700 miles of class 4 roads and trails in Vermont. These rights of way can ensure many types of public access—including links to trail systems, forest and agriculture management, and developable property.

The public right of way can take any of five forms in a town highway system. Town highways are classified as 1, 2, 3, or 4, and town trails are classified as 7. Class 1 highways carry a state highway number and are part of the state highway route. Class 2 roads are well-traveled routes carrying traffic to and from Class 1 highways. In this guidebook, we use the term “arterial” roads to refer to Class 1 and Class 2 roads.

All other traveled town highways are Class 3. Class 3 highways are supposed to be maintained year-round, but actual levels of maintenance vary from town to town. Class 4 highways are usually the most marginal town highways, and are generally only maintained for summer use. Class 5 roads are state forest highways. Class 6 roads are national forest highways, and Class 7 roads are legal town trails not maintained for automobile use.

The first step in determining management of class 4 roads is to conduct an accurate inventory. With an accurate inventory in hand, select boards, road commissioners, and/or public works departments can—preferably with a high degree of public input—determine the level at which class 4 roads will be maintained, and the uses that will be allowed and encouraged on them.

Communities have several options for the use of Class 4 roads:
- Summer maintenance only. No winter plowing or maintenance.
- Recreation trail use for cross-country skiing, snowmobiling, and snowshoeing in winter when roads are not maintained.
- Year-round trail use.
- Access to properties for timber management, agriculture, and recreation.

Public Investments in Mobility between and within Towns

What can we do to encourage ride-sharing in our town? Are there a few large employers that would share the cost of alternative transportation options for town residents? What can we do to increase the mobility of low-income residents by using our investments more efficiently, or making new investments? What types of infrastructure investments will help us create more jobs close to home for town residents?

Bus stop at entrance to shopping center.

Access Management

Communities can protect their investment in town roads by managing the access to these roads through local regulations and curb cut policies. Communities that focus development in growth centers, for example, can reduce the number of curb cuts between these centers along highways. Fewer curb cuts means fewer opportunities for traffic conflicts and congestion. If curb cuts are not controlled, communities may need to invest public funds in traffic lights, turning lanes, and road widening.
Ride-Sharing
Vermont municipalities can, alone and in concert with regional, state, and federal initiatives, invest in infrastructure that reduces auto dependency for travel between towns. One way to cut down on commuting is through ride-sharing.
Communities should consider the best location for a commuter lot in relation to the road system and where commuters live. It is important to locate such lots near shops, services, schools, and day care. Communities with commuter lots that have reached capacity should consider whether demand is high enough to justify starting a regular van service.

If many town residents are commuting to several large employers, those employers may be able and willing to subsidize car or vanpooling. Depending on the demand, municipalities might consider providing municipal transportation services to popular destinations such as health care facilities, airports, colleges, and non-local shopping.

Telecommunications
Finally, by understanding the job preferences and skills of the people who commute to work from your community, municipalities may be able to work in partnership with others to help create work for local residents closer to home or housing closer to jobs.

One way to encourage more jobs in the community may be to develop a technology center in the village or downtown, where different businesses can take advantage of fiber optic networks, TI lines, and related infrastructure.

A Rural Job-Building Collaboration
The Northeast Wyoming Economic Development Coalition (NWEDC) is a five-county organization that has been engaged in a variety of economic and community activities since 1994. NWEDC identified telecommunication needs and examined potential technology applications. The coalition organized public meetings, conducted a survey, and identified priorities for each county in the region. For example, Niobrara County, home of the largest town, has invested funds in a citywide fiber network for the municipal utility, but wanted to recapture some of its investment by leasing excess capacity.

Walking and Biking
What facilities in your town are available for pedestrians and bicyclists? How safe is your community for pedestrians? For bicyclists? Where do accidents involving pedestrians and/or bicyclists occur most often? Are there auto-free zones in your village centers? Are your crosswalks clearly marked? What is the speed limit on your residential streets? How many miles of bike and walking paths do you maintain? Is it possible for children to bike and/or walk safely to school? Is it possible for residents to bike and/or walk safely to shopping, work, and recreation opportunities?

Analysts have predicted that real estate values over the next 25 years will rise fastest in “smart communities” that incorporate a mix of residential and commercial establishments in a pedestrian-friendly configuration. Communities are also beginning to invest in infrastructure for walking and biking. Not only are these ways of getting around non-polluting and healthy, they’re also much less expensive than driving.

What’s more, when we bike or walk, it is easy—unlike being inside a car—to stop and visit with a neighbor or greet an acquaintance on the street. Studies have shown that residents of streets with low-level traffic have three times as many friends on their street, and two times as many acquaintances, as those who live on high-traffic streets. Also, neighborhoods with much pedestrian activity have more “eyes” on the street to protect against crime.

Investments in infrastructure that promote walking and biking also make economic sense for towns. Tourists come to Vermont to walk and bicycle in our scenic countryside, and to enjoy our compact, pedestrian-friendly town centers. In 1992, an estimated 32,500 visiting cyclists spent $13.1 million in Vermont—about twice the amount of money generated by Vermont’s maple syrup producers in a good year!

Infrastructure investment is critical to promoting safe walking and biking in Vermont towns. Studies have found that one of the main deterrents to biking and walking is the perceived danger. And the danger is real: according to the National High Traffic Safety Administration, walking is 36 times more likely, per kilometer traveled, to result in fatal injury than riding in a car. Cycling is 11 times more likely to result in death.

But these dangers are not inevitable. Infrastructure investments that improve safety for walkers and bicyclists include:
- auto-free pedestrian zones, particularly in downtown areas;
- clearly marked crosswalks;
- sidewalks on both sides of all streets, with benches;
- pedestrian and bicycle traffic lights, usually with priority signaling for bikes;
- mountable curbs, which permit drivers on narrow streets to pull safely out of the way of emergency vehicles; and
- bicycle streets, lanes, and paths with separate rights of way for bicyclists, including special “cut-through” short cuts for bicycles off the road network altogether.

Walking and Biking to School
According to the U.S. Center for Disease Control, only 13 percent of school-age children walk or bike to school, while 78 percent do not get adequate physical exercise. One in five children, one in three teens, is overweight or at risk of becoming overweight.

The Center for Disease Control sponsors a Kids Walk-to-School Program to increase non-motorized school access.

“Only one in eight children walks to school today, in part because huge acreage standards dictate that schools be built in outlying areas where land is plentiful. School costs have risen dramatically as ‘school sprawl’ has proliferated.”

From Why Johnnie Can’t Walk to School.” National Trust for Historic Preservation 2001
For more information, call 1-888-232-4674 or visit www.cdc.gov/nccdphp/dnpa/kidswalk.htm.

“U.S. Walk to School Day” is promoted by the Partnership for a Walkable America (www.walktoschool-usa.org). Both these programs can help communities identify the infrastructure investments that can improve safety for children walking and biking to and from school.

Planning for Cycling and Walking
Transportation planning organizations must include cycling and walking in their plans. Many Vermont communities have been able to access federal transportation dollars to develop bike paths, rail trails, and other infrastructure for car-free mobility.

A Statewide Bike and Pedestrian Plan
The Vermont Agency of Transportation has completed a comprehensive plan to improve bike and pedestrian infrastructure. The focus of the plan varies by location. In Montpelier and Barre, people commute to work—so maintaining and expanding pedestrian amenities is particularly important in Central Vermont. In the Northeast Kingdom, the plan’s goal is for the region as a whole to function as a corridor that connects international bicycle traffic to key New Hampshire and Vermont route and trail systems. The region seeks to develop major north-south bicycle routes using the state road network, which can connect to short bicycle links leading into town centers.

Resources
Root Design: The Local Government Commission is a nonprofit corporation working for more livable communities. LGC has a number of relevant publications, including Street Design Guidelines for Healthy Neighborhoods and Emergency Response. Visit www.lgc.org.


Technical Assistance on Local Roads and Transportation: The Vermont Local Roads Program (VLRP) is a partnership between the Vermont Agency of Transportation and the Conservation Law Foundation. Visit www.lgc.org.

Access Management: Elizabeth Humstone and Julie Campoli, Access Management Guidebook, for the Northwest Regional Planning Commission, St. Albans, Vermont. 1-800-564-5958.

Multi-Modal Transportation Planning: The Rural Transportation Online Center, National Association of Development Organizations, provides information on best practices, an electronic library, a shared Internet resource with up-to-date news and resources for rural transportation professionals, a rural transportation planners network, and more: www.nado.org/rtoc.

The Vermont Agency of Transportation’s Bicycle and Pedestrian Plan provides details of state and regional planning and implementation efforts, and some guidance on funding sources for bicycle and pedestrian-related improvements. Available at www.aot.state.vt.us/planning/bikeped.htm.

The Federal Transit Administration, Region I, provides assistance to applicants interested in the Livable Communities Initiative, which seeks to strengthen the links between transit planning and community planning, and to provide physical assets that better meet community needs. Transportation Systems Center, 55 Broadway, Suite 920, Cambridge, MA 02142-1093; 617 494-2055.

The Vermont Trails and Greenways Council has a model “Town Policy on Class 4 Roads and Trails,” available from the Vermont Local Roads Program at Saint Michael’s College: 802 654-2652.

The Vermont Mountain Bike Association has mapped and assessed class 4, 5, 6 and 7 roads in Central Vermont. On-line printable maps are available at www.vmba.org/maps. Paper maps are also available from VMBA.

A list of walking paths in Vermont communities is maintained by the Governor’s Council on Physical Fitness and Sports, and can be found at www.state.vt.us/walkfly.htm.

Telecommunications: The Vermont Telecom Advancement Center at Champlain College of Vermont promotes education on the latest available telecommunications technology, services, and products in Vermont, and promotes economic growth in the state through the use of telecommunications. Vermont Telecom Advancement Center, 163 South Willard Street, Burlington, Vermont 05401; 802 865-6448, info@vtac.org.

The Vermont Council on Rural Development is developing a toolkit for community telecommunications planning, to be available in 2002. Contact Paul Costello at Vermont Rural Development Council, 89 Main St., P.O. Box 1384, Montpelier, VT 05601-1384; 802 828-6024, VCRD@sover.net.

Wisely Managing Water and Wastewater
Smart growth protects both human health and the environment. To improve water and wastewater treatment practices, there are many important steps a municipality can take—steps that will both protect water quality and help achieve other smart-growth objectives, such as compact development.

The first step is to assess present conditions and future needs. The second is to develop a plan to meet those needs; the third is to implement the plan. At each stage, the town should be working to ensure that its land-use planning objectives are consistent with any proposed improvements to facilities.
Water Supply

What is the source of water for your town?
For businesses? Homes? Schools? How many people depend on water from community versus individual systems? Where are the water systems? What is the average water use per household? What is the capacity of your water system? Do your systems need upgrading? What water conservation measures does your town employ? Does your town have issues with water quality? What are they?

Vermont appears to have abundant water resources—yet wells go dry in extended drought periods, and water quality is not always what it should be. As land uses compete for good water sources, finding new water supplies has become more difficult. More development brings with it more risks to water quality. Maintaining water systems is also becoming more costly as operating and monitoring requirements increase.

Municipalities play an important role in locating, distributing, protecting, and conserving water supplies. A smart-growth approach protects and conserves our water, allowing development of water and sewer systems only in areas designated for residential, commercial, or industrial (including agricultural) growth.

Water Source Protection

Protecting water sources from contamination is critical to the long-term health of our communities, and to their capacity to grow. Source protection should be a key criterion in planning for all land uses. Communities with effective source protection programs may save substantially on the costs of complying with Safe Drinking Water Act regulations and federal monitoring requirements.

Water suppliers with water source protection programs may also qualify for waivers from monitoring requirements, thereby reducing monitoring costs. Vermont offers a waiver program. For more information, contact the Water Source Protection Section of the Department of Environmental Conservation: 802 241-3409.

New water source protection focuses on surface as well as groundwater, on prevention as well as enforcement, and has a strong public involvement component. State funds (see resources) can be used for the purchase of land or easements.

Other programs that can help rural municipalities with water source protection include the Rural Utility Service, administered by USDA Rural Development; the Environmental Quality Incentives Program (EQIP), administered by the National Resources Conservation Service; and the Community Development Block Grant Program, administered by Vermont’s Department of Housing and Community Affairs.

Public Water Systems Service Areas

Development is attracted by the availability of infrastructure for water distribution and treatment. A community can direct its pattern of growth by how it locates water systems and designated service areas.

Compact growth depends on compact service areas. Without clear service-area boundaries and policies for distribution of water services, towns may encourage sprawl by permitting new water systems, or extensions to existing systems, that do not conform with town plans. To remedy this, communities can adopt a public-facilities regulation that requires utilities to be in place before growth can occur, and that ties the construction of new facilities to a comprehensive town plan and capital improvement program.

As regulatory and monitoring requirements have grown, towns have increasingly been asked to take over private systems. As with roads, care needs to be taken to ensure that private water systems are built to standards acceptable to the town, are properly maintained, and are within planned service areas.

In considering the location of water systems, it may be possible to gain economies of scale by connecting existing systems—but be cautious about connecting systems that are outside targeted growth areas, since this can contribute to sprawl. The Agency of Natural Resources has developed a toolkit for controlling growth where necessary sewer and water line extensions cross open spaces.

Wastewater Disposal

Does your town have a municipal sewer system? If so, what is its capacity and its current use? Have you defined the service area for the sewer system? What is your town's sewer allocation policy, and does it support the growth patterns and uses you want to see? Does it prohibit use for growth you do not want to see? Do you have a capital budget that supports your town plan and provides for sewer system upgrades and maintenance? Are there private systems in your community that serve more than one residence or business? Who is responsible for their operation and maintenance? Have you adopted tools to conserve water use? Does your sewer system meet Clean Water Act standards?

Municipalities have a responsibility to ensure public health and safety through effective management of sewage. The way they do this affects the cost and location of development, the quality of water for drinking and recreation, and the costs of wastewater management to both the municipality and the users of its sewer system.
In Vermont, wastewater is treated by public and private systems serving multiple users, and through individual septic arrangements. There are 90 municipally owned sewer systems in Vermont, serving about one-third of Vermont communities. Less than 50 percent of Vermont’s population is served by public sewer systems. As of the mid-1990’s, there were 194 unsewered villages in Vermont. Those who are not served by sewer systems either rely on individual septic systems, outhouses, or straight pipes into rivers or streams.

Vermont is among the top 10 states with the highest percentage of major wastewater facilities in “significant non-compliance” with Clean Water Act water quality standards. Many of Vermont’s municipal sewer systems need upgrading and/or expanding. Only half of Vermont municipalities have adopted any form of local regulation over wastewater systems—and among those that have, many are outdated.

**Water Conservation to Reduce Demand**

Up to 98 percent of sewage is water. Demand side management — reducing wastewater at the source — allows a community to make the most of its current water supply and wastewater treatment capacity.

Encouraging, even requiring, the use of low-flow plumbing fixtures in retrofits and new construction can help reduce wastewater at the source. Allowing alternative on-site treatment systems, such as composting and propane toilets that use no water at all, will reduce the demand for municipal capacity, and may extend the life of certain on-site systems. Finally, removing as much water as possible from the wastewater stream before it enters the treatment facility will reduce the size of any new facility required to treat waste.

**Wastewater Management Options**

The options for wastewater management in small communities have expanded with the development and testing of new technologies and increasing acceptance of decentralized approaches. Decentralized systems include on-site septic systems, cluster systems, and alternative wastewater treatment technologies.

Decentralized systems can be customized to the needs of the users and the site, are typically less expensive to install and maintain, and can remove development pressure from prime agricultural land by permitting development on more marginal soils.

Centralized systems also have their place. Village lots are often small and have poor soils. When communities do not have a municipal sewer system, environmental protection rules restrict the ability to develop new lots or build on infill lots in established village centers. Communities without a sewer system may find that creating a system, combined with a clearly defined service area and sewer capacity allocation plan, can contribute to compact patterns of settlement and encourage infill development.

Unfortunately, it is difficult for towns that do not have a centralized system to obtain financing to install one, unless they are addressing an existing problem. In other words, towns with the foresight to plan before a problem occurs are at a disadvantage when it comes to much government funding. However, Vermont’s Agency of Natural Resources is trying to add funding for decentralized systems, so it is worth checking with ANR before assuming that no funds are available.

**Self-Help for Treatment Needs**

One approach to building wastewater disposal systems in small towns is self-help programs like the Small Towns Environment Program (STEP), run by the Rensselaerville Institute in New York. STEP asks not what a highly engineered system will cost, but rather what a small rural community can afford. Then, working with engineers and the community, STEP galvanizes local resources—including labor, equipment, and services—to enable communities to build their own wastewater treatment facilities that meet federal, state, and local standards. This always results in considerable savings over conventional approaches.

**Smart Growth Design for Wastewater Disposal Systems**

**SYSTEM IMPROVEMENT**

Many of Vermont’s municipal sewer systems have reached or exceeded their design life of 20 years. At that point, the community should assess current and future growth needs and consider whether to repair and/or expand the system. Coupled with regular maintenance and conservation measures, reinvestment in existing facilities can help to extend the life of a system and ensure that public health is protected where development exists.

**SERVICE AREAS AND SEWER ALLOCATION POLICIES**

Before building or expanding a central sewer system, municipalities should consider the types of development they wish to support, and the areas of town where that development is best located. Once the sewer infrastructure is in place, it is more difficult to control development patterns.

Communities should establish sewer service areas and confine sewer lines within those areas. While developers may be willing to pay for line extensions outside the area, communities should not allow that until the existing sewer service area is more fully developed, and/or a plan is developed for expansion of the growth center.

**The Town of Essex chose not to include this land in its sewer service area.**

For example, if a town intends to create or support an industrial park, a smart growth approach would provide sewer and water facilities for industrial use within a compact settlement pattern, rather than allow sewer line extensions through undeveloped land to a park site. Over time, such extensions are likely to support a sprawling development pattern.
Sewage capacity can be allocated according to uses, as well as by locations. By establishing “set-asides” for different uses, communities can insure that mixed-use development will occur. For example, if a community seeks to encourage affordable housing, a portion of sewer capacity can be restricted to use by affordable homes. If a community seeks to attract or retain light industry, a portion of sewer capacity can be allocated and reserved for that use.

**Shelburne: Setting Boundaries**

The new sewer ordinance recently completed by the Town of Shelburne, working with the Conservation Law Foundation, includes a map that sets a boundary beyond which sewer service can't extend, except in unusual circumstances. In the process of developing the ordinance, townspeople considered such issues as:

- What is the appropriate boundary for a sewer area?
- Will extensions be allowed?
- Should a phasing policy for the distribution of sewage capacity be established, with a percentage of the total set aside for each year?
- Should the ordinance specify the share of capacity that will be available for different categories of use (for example, residential, commercial/industrial, institutional)?
- Should there be exemptions from some provisions of the ordinance for particular uses that meet important community goals (for example, affordable or elderly housing)?

**On-Site Sewage Systems**

Do you know how many individual on-site septic systems are in your community, and where they are? Do you have an on-site septic system ordinance? If so, do you monitor its implementation? Do you have a sewer management district for on-site sewage disposal? Does your ordinance require periodic maintenance and reporting? Does your ordinance allow the use of alternative technologies, provided they are approved by the state? Do you know how many local septic systems are failing? Do you require training and certification for on-site septic system designers and installers?

Poorly managed private on-site sewage systems can contaminate public water resources. Municipalities that want to grow smartly need to address the quality, performance, and maintenance issues associated with these systems. Where on-site sewage systems are allowed and under what conditions can impact how the community grows. Therefore, municipal standards for on-site sewage disposal can be a tool for smart growth.

When communities create a sewage management district for private on-site systems—offering regular services, such as pumpouts and periodic inspections, often for a fee—homeowners tend to maintain their systems better. And if these systems are not polluting local waters, this can avert the need for municipal investment in an expensive sewage treatment facility.

Unlike most other states, Vermont has no required minimum standards for all septic systems. Nor are Vermont’s standards uniform. In fact, only about one-third of septic systems built each year are covered by state standards. Another third are covered by local standards, the remaining third by no standards at all. And in practice, about half the systems built each year are not reviewed for effectiveness or safety. Even though our challenging soils often require non-traditional approaches to wastewater treatment, Vermont does not require training or licensing for septic system designers or installers.

There is a variety of alternative designs for on-site wastewater treatment that are beginning to be accepted by the state of Vermont. These systems may help more compact development occur in village centers, where older on-site septic systems required large lots. They may also enable development in previously restricted areas, such as steep slopes. When these new septic systems are approved by the state, it is important for municipalities to have measures in place that prevent development in areas that are unsuitable for growth—such as steep slopes, shallow and erodable soils, wildlife habitat, important natural areas, and remote, inaccessible lands.

**Jericho: A New Model**

The Town of Jericho is leading Vermont communities in a movement toward smarter, more cost-effective wastewater management. Through decentralized wastewater management, the town assesses current systems, characterizes environmental conditions, and analyzes the community’s future options. Jericho’s assessment revealed that the 2-30 percent rate of local on-site system failure was caused by age, design, and/or construction of systems. Most failures have been effectively resolved by on-site replacement. Jericho’s proactive approach to decentralized wastewater management is saving the town money by using existing wastewater infrastructure (in residents’ backyards), protecting homeowners’ investments in their current systems, and avoiding the high cost of developing a centralized sewer and wastewater facility.

**Stormwater Collection and Treatment**

Is stormwater runoff damaging property and public facilities in your town? Does runoff carry nonpoint-source pollution into local streams? Does heavy rainfall overload your sewage treatment system and cause the discharge of untreated wastes? If so, is your community conducting its EPA-required plan for comprehensive stormwater management? Are there private stormwater systems in your town? If so, are their permits being monitored and enforced? Has your community considered using the newer approaches, which separate stormwater from wastewater?
Stormwater runoff—precipitation that does not filter into the ground—can extensively damage both private property and public facilities, and may adversely affect water quality. Stormwater runoff is a significant contributor to nonpoint source pollution (pollution from diffuse runoff, as opposed to sewer discharge pipes). Yard wastes, agricultural and lawn fertilizers, animal waste, stream-channel erosion, and parking lot debris, all carried by stormwater runoff, contribute unwanted nutrients and other contaminants to Vermont's rivers and lakes. Stormwater runoff can also affect stream temperatures and aquatic habitat.

The state of the art in stormwater management has changed dramatically in recent years. While the historic approach has emphasized structures to capture, combine, contain, and treat stormwater, newer approaches emphasize separating stormwater from other wastewater, minimizing impervious areas to reduce stormwater runoff, and relying on natural systems as much as possible for treatment. The goal of smart growth stormwater management is to maintain after development, as nearly as possible, the characteristics of predevelopment runoff.

Vermont communities face several issues that relate to stormwater management. A number of municipal wastewater systems here were developed in whole or in part to capture and treat stormwater, as well as wastewater. During heavy rainfall, these systems can overload and discharge untreated wastewater into rivers and streams. The EPA is requiring communities with these systems to provide a plan by March 2003 to implement comprehensive programs for effectively addressing stormwater management.

Many Vermont communities that have grown rapidly have permitted hundreds of private stormwater management systems, including catch basins and other devices that collect the stormwater, provide some level of treatment and release it. Many of the permits, both state and local, under which these systems have been developed have not been monitored or enforced. To protect water quality, these towns will need either to enforce maintenance requirements on private developers (if such requirements were included in their permits); or, more likely, to take over maintenance of previously private infrastructure.

To address the issue raised by the burgeoning number of individual stormwater permits statewide, the Department of Environmental Conservation is proposing the use of stormwater utilities, similar to wastewater and water supply utilities. Each municipality would become responsible for controlling stormwater within its boundaries, and would apportion the costs back to users.

**Stormwater Management for Smart Growth**

The more impervious surfaces a town has, the more stormwater runoff it must cope with. Current municipal regulations tend to aggravate this problem by insisting on channelization and collection of stormwater flows, including catch basins, and by mandating an excessive number of parking spaces and excessively wide roads—thereby requiring unneeded expansion of impervious surfaces.

As much as 65 percent of the total impervious cover in the landscape can be classified as "habitat for cars"—including streets, parking lots, driveways, and other surfaces designed for the car. A one-acre parking lot produces a runoff volume almost 16 times as large as the runoff volume produced by a one-acre undeveloped meadow.

*Wherever feasible, use porous alternatives to paving, such as lattice blocks and bricks set in sand.*

*Remove impervious surface areas that no longer serve a useful purpose, or could be replaced by a more porous surface.*

*Encourage on-lot retention of stormwater by infiltration, via grassed swales, filter strips, and bioretention areas, and/or storage via cisterns and rain barrels.*
• Create incentives for developers who use conservation design that limits impervious surfaces, and uses natural systems to manage stormwater.
• Wherever possible, avoid rooftop runoff to the roadway.
• Reuse collected stormwater—for example, for irrigation, landscaping, gardening, and golf courses.

In considering stormwater management ordinances, communities should give special attention to their application in compact development areas. Otherwise there is a risk of lowering development density by requiring too much green space around developments that are intended to be close together.

Managing Runoff More Naturally

“When earnest officials, who are also trying to do the right thing, see the waiver, they naturally assume that the developer is trying to get away with something. The problem is that the methodology used in most ordinances has not caught up with reality, and it’s hard for officials to understand that.

“Most ordinances use a one-size-fits-all approach to stormwater,” notes Wesley Horner, the associate director of the municipal assistance program at the Brandywine Conservancy. “Most ordinances pare the infinite complexity of the natural system down to an engineering formula: How deep does the hole have to be, what size discharge pipe do we use, and what is the outlet size? Ordinances need to be expansive rather than reductive, so that we can pick and choose from the growing list of best management practices,” Horner suggests. “Most of the time the regulations encourage you to ignore the landscape, lay out the net area, and then call in an engineer to make it work.”

Resources


Vermont’s Drinking Water State Revolving Loan Fund provides loans for source protection to municipalities and privately owned nonprofit water systems that serve populations of fewer than 10,000. Agency of Natural Resources, Water Supply Division, www.vermontdrinkingwater.org.

The Local Government Environmental Assistance Network publishes A Decision Maker’s Guide to Small Town Drinking Water, which is useful for understanding the flexibility that may be available under the Safe Drinking Water Act amendments: www.lgean.org.

The Northeast Rural Water Association has developed a Rural and Small Water System Self-Assessment for Capacity Development that covers finance, management, and technical aspects of water systems. www.neuralwater.org, P.O. Box 622, Colchester, VT 05446; 802 660-4988.

Wastewater Disposal: Information on state loan awards for wastewater treatment and collection systems is available from the Financial Management section of the Department of Environmental Conservation: 802 241-3734.

The Small Towns Environment Program (STEP) is a community self-help program for water and wastewater management at the Rensselaerville Institute, 63 Huyck Road, Rensselaerville, NY 12147. Phone 518 797-3783, e-mail info@tricampus.org, or visit www.tricampus.org.

The New England Interstate Water Pollution Control Commission offers a training program developed by EPA for managers of small wastewater systems. For a training schedule, call 978 323-7929 or visit www.neiwpcc.org.

The National Environmental Training Center for Small Communities offers a training program, “Assessing Wastewater Options for Small Communities: A Course for Local Decision Makers.” It can be presented directly to local officials and covers facility development, regulatory requirements, selection of wastewater technologies, and financing options. To learn more, and/or to receive a complete packet of training materials, call NETSCC at 1-800-624-8301. (Ask for item #TRTPCD06.)

The National Small Flows Clearinghouse has recently published a booklet on wastewater management options for rural communities that are considering alternatives to centralized systems. The booklet outlines steps to a community needs assessment, and can be ordered through NSFC at 1-800-624-8301 or by email at nsfc_orders@mail.nesc.wvu.edu. (Ask for item #WWBLMG09.) NSFC also offers Small Flows Journal, which focuses on small community wastewater technologies and issues, and a catalog of products that relate to wastewater management.

There are resources in Vermont to assist communities with problematic sewer systems. The USDA Rural Development Rural Utilities Service and Vermont’s Agency of Natural Resources are working together to share and combine resources to meet the needs of Vermont communities. More information on USDA’s Rural Utilities Service is available at www.epa.gov/owm/sc/usda/index.htm.


The Department of Environmental Conservation, Vermont Agency of Natural Resources, has issued Managing Stormwater in Vermont and The Vermont Stormwater Management Handbook Technical Support Document for public review and comment. These documents are a response to Act 114, which was passed into law during the 1999/2000 legislative session and substantially modifies the management of stormwater in Vermont. www.vtwatterquality.org/stormwaterTSD.htm.

Nonpoint Education for Municipal Officials Project (NEMO), at University of Connecticut Cooperative Extension, provides a wealth of information on stormwater management and related topics. Email nemo@uconn.edu, visit nemo.uconn.edu, or phone 860 345-4511.

The National Wildlife Federation, in cooperation with the Lake Champlain Basin Program and Burnt Rock Associates, sponsored a program for Vermont communities on stormwater and sprawl in May 2001. The excellent packet of handouts on innovative site design, polluted runoff, best management practices, and impervious surfaces prepared for that program is available from Jan Lars Mueller, National Wildlife Federation: 802 229-0650 or mueller@nwf.org.

Other Resources: The Northeast Rural Community Assistance Program offers a comprehensive program of technical assistance to rural communities in water supply, water protection, and management of wastewater and solid waste. Contact RHI, The Northeast RCAP, 218 Central Street, Winchendon, MA 01475, or email general@rhircap.org.

USDA Rural Development is a source of technical assistance and grant money for communities. Third Floor, City Center, 89 Main St., Montpelier, VT 05602; 802 828-6010.
**BRINGING IT ALL TOGETHER:**
**MUNICIPAL PLANNING FOR SMART GROWTH INVESTMENTS**

How do you put all the pieces of infrastructure investment together into a pattern that embodies smart growth in your community?

Town plans, municipal bylaws and ordinances, official maps, capital budgets and programs, and other town policies are the tools available to Vermont municipalities to direct growth and development. They will be most influential in bringing about smart growth when these tools are aligned with smart growth principles, and when they support and reinforce one another.

In the third issue of its publication series *Exploring Sprawl*, the Vermont Forum on Sprawl assessed the causes and costs of sprawl in Vermont communities. Though sprawl is the result of thousands of decisions made every day by individuals, business people, and public officials, a town’s municipal plan, zoning and subdivision ordinances, and other policies related to local growth can direct those decisions toward smart growth.

But to do so, town plans must have specific and clear objectives; zoning and other ordinances must support the language and intent of the plans; and municipal investments must be scheduled and implemented to shape growth in the manner envisioned by the plan.

**The Town Plan**

How can you tell if your town plan supports smart growth investment principles?

Instead of writing a whole new plan, we recommend that you first review your current plan. Guiding questions for your review should include:

1. Does the plan have a vision for a future of compact settlements separated by rural countryside?
2. Does the plan provide for investments to revitalize downtown areas?
3. Does the plan call for developing vacant land within the existing settled areas? Are incentives provided?
4. Does the plan promote road patterns that increase connectedness in settled areas, and reduce the likelihood of sprawl?
5. Does the plan support decreased reliance on automobiles?
6. Does the plan protect water sources, and require use of existing sewer and water capacity before new capacity is created?
7. Does the plan establish water and sewer service areas, outside of which municipally provided water and sewer services will not be allowed?
8. Does the plan provide for rural service areas, within which municipal service levels will be specified?
9. Does the plan reexamine road width, sidewalk, and parking requirements to reduce impervious surface area and promote walking and biking?

10. Does the plan address housing requirements of people who work in the community, and the job requirements of people who live there?
11. Does the plan encourage the use of alternative sewer, water, and building technologies?
12. Does the plan envision mixed use development?
13. Does the plan provide for a network of connected, deliberately chosen and protected open space that meets community objectives?

A newly protected piece of waterfront property draws residents and supporters.

**Zoning and Subdivision Regulations**

Are your zoning ordinances and subdivision regulations friendly to smart growth investment principles? Can you make them more so?

Regulatory approaches—such as zoning ordinances and subdivision regulations, as they have been traditionally developed—can segregate different uses of land, thereby preventing mixed, compact development; require excessive road widths and parking; open up greenfields and road corridors for development in lieu of infill; and promote fragmentation of the countryside through lot-size requirements.

The Vermont Forum on Sprawl and the Conservation Law Foundation’s publication, *Community Rules: A New England Guide to Smart Growth Strategies*, provides advice to municipal officials on zoning and subdivision provisions that promote smart growth investment principles.

**The Official Map**

A municipality can develop an official map that shows the location and widths of existing and proposed rights of way for all streets and drainageways, and of all existing and proposed parks, schools, public paths, municipal buildings, and other public facilities. The official map shows where public investments are planned and where they are not. It also puts the community in charge of where roads, water and sewer lines, sidewalks, and other utilities will go, instead of leaving these options open to developers.

Official maps offer opportunities to reserve lands that will connect open spaces through greenways. Official maps can also insures that new streets are interconnected and located to promote...
compact village development. Public rights of way can be located on an official map. The statutory authority for the official map comes from VSA Title 24, Chapter 117, Section 401 (3).

The process of developing an official map is similar to that for a zoning ordinance, and should involve much public discourse. In fact, the making of an official map provides residents with an opportunity to discuss their visions for the community, and to assess the extent to which current and proposed plans will allow these visions to be fulfilled.

Once a town has an approved official map, no building or improvement may be constructed within the lines of any facility laid out on the map without a permit. If such a permit is denied, the town’s legislative body has three months in which to exercise a right of first refusal for the property in question.

Service-Area Boundaries and Agreements

An official map can be used to identify area boundaries for municipal services, including but not necessarily limited to sewer and water, road maintenance, school bus services, public transit, sidewalks, telecommunications infrastructure, and signage.

By carefully defining the geographic area within which each service will and will not be provided, communities can relieve the pressure to respond to those who choose to settle outside designated service areas, and later demand services. (See also the rural services policy, later in this section.)

Capital Budget and Program

How can you plan for infrastructure investment that supports smart growth?

The most important planning tool communities have for infrastructure investment is their capital budget and program. This allows a community to identify the amount of money it will need to invest in acquisition, construction, and major repair of public infrastructure to meet service standards. Needs can then be ranked by priority, and the scheduling of infrastructure investment can be coordinated with provisions in the town plan and ordinances. At the same time, the capital budget and program allows the town to time the improvements, so that they are spread evenly over the six years of the program; and it specifies a method of paying for infrastructure investment.

Capital budgets can further the goals of smart growth by letting developers and others know, ahead of time, the order and priority of infrastructure investment in a community. By adhering to a capital budget, a community can put the community needs first, resisting demand to cater to the individual needs of developers.

Rural Services Policy

One tool for building communications and local understanding about municipal infrastructure and services available in rural areas is a rural services policy, also called the “Code of Country Living.”

The policy’s purpose is to inform people who are planning to settle in rural areas of the realities they will face with regard to water, sewer, road conditions, utilities, fire protection, emergency services, school transportation and many other aspects of life that make rural living different from living in a densely settled area. Combined with service area boundaries, a rural services policy can be used to alert developers, realtors and people moving into your town about the type and quality of municipal services they can expect to receive.

By going one step further—by requiring residents who choose to settle outside service-area boundaries to sign an agreement acknowledging their understanding of the service limits they must accept—municipalities can relieve the pressure to extend infrastructure and services on demand. Agreements similar to these are already in use in some communities for residents who choose to settle on Class 4 roads, and/or for residents who choose to settle next to farms.

Studies

Cost-Benefit Analysis

To further understand the costs and benefits of different patterns of growth in your community, consider cost-benefit analysis. A recent study compared 18 different communities in Michigan, and found that smart growth development reduced construction costs for water and sewer lines by almost $33 million.

In this state, the Vermont Forum on Sprawl found that spreading patterns of residential and commercial development tend to increase municipal costs. Officials in the rural towns studied by the Forum on Sprawl said that spread-out residential development contributed to their need to make significant budget outlays for road reconstruction and maintenance and contributed to increased costs for emergency services, school bus transportation, and police patrols.

Also, in Vermont as elsewhere, the long-term costs of expanding sewer and water systems are born by all ratepayers. The more miles of pipe in the system, the higher the long-term maintenance costs. Because fees are averaged over the whole service area, commercial strips and sprawled residential development are not paying the full costs that they create for these systems.

A comprehensive cost-benefit analysis should include not only up-front capital costs, but also long-term costs for maintenance.
How much development can your community really support?

This question is relevant for residential, commercial, and industrial development. Every new house built typically costs its community more in services than it generates in tax revenue. Commercial and industrial developments may provide more in revenue than they cost to service. Privately held open space nearly always provides more in revenue than it costs to service. So, clearly, the mix of development types in any community is important for balancing out revenues and costs.

A simple and effective approach to ensuring that your community doesn’t overbuild, especially in the commercial sector, is to perform a regional market study. In any given area, there is only so much money that people can spend on goods and services. Unless the market is expanding rapidly, there are only so many businesses the local area will be able to support. Allowing growth beyond the capacity of the market to support it results in empty storefronts and underutilized sites. Likewise, there are only so many qualified employees for any given industry in a region. Developing industry that requires additional employees will lead to in-migration and the need for greater infrastructure investment.

A regional market study begins by estimating the region’s likely population and employment growth over the next few decades, on a community-by-community basis. Based on that analysis, it sets parameters for the amount of new commercial, industrial, and residential space the region can support in the foreseeable future. Such a study can also be valuable at the local level, as long as regional impacts are taken into consideration. From a smart growth perspective, each community—and the region as a whole—should ensure that all existing space in established centers is fully utilized before any new centers are built.

How do you maximize the value of existing infrastructure?

One way is to adopt an “adequate public facilities” approach. This requires, as a condition of permitting, that existing public facilities be adequate to meet the needs of any new development. If not, the right to development can be denied.

Adequate public facilities can be misapplied if a community refuses to extend public services but does not also prevent new development. For example, Sarasota County, Florida used its adequate public facilities policy to justify not providing public services to new residential subdivisions. Unfortunately, permission to develop was not denied, and the quantity and quality of services provided by private developers was poor. As a result, a few years later the county found it had to replace much of the infrastructure at public expense.

A good adequate public facilities policy should be based on clearly defined standards of service that designate quantifiable targets for each public service. For example, what is the maximum acceptable emergency response time in your community? What percent of school-age children are able to bicycle or walk safely to school? How many miles of recreation trails are available per resident? On average, how many gallons per day of sewer capacity are required by a single residence?

Once target standards are defined, current public services can be measured and assessed to determine whether acceptable standards are being met. If they are, the town can estimate the cost of expanding services to accommodate new development while continuing to meet the standards. If standards are not being met, the cost of improving performance to an acceptable level should also be factored in.

Determining the Effect of Proposed Growth on Your Tax Base and Your Capacity to Provide Public Services

Fiscal impact analysis is the process of evaluating the tax revenue that will be generated by new development, compared to the cost of providing the public facilities and services that the project will demand.

There is no single “correct” approach to fiscal impact analysis, but its reliability and usefulness is enhanced when a number of factors are present. The analysis should at least meet the following standards:

- The chosen methodology is appropriate to the size of the community, and to the questions the community wants to answer.
- The distribution of benefits and costs is recognized and accounted for. This should include costs and benefits for all communities in the impact area.
- Service levels should be clearly defined, along with the costs to achieve, maintain, improve, and/or expand them as required. The sources of all revenues associated with provision of services, such as sewer and water, should be clearly identified.
- Both revenues and costs should be linked to the population and economic characteristics of the project and community.
- The basis for determining capital costs should be explicitly stated.
- Multiplier approaches should be used cautiously, and only applied to regional analyses. Multipliers should be applied to the cost side as well as to the revenue side.
- Realistic valuation data and build-out scenarios should be used, and the assumptions behind such scenarios clearly explained.
- The key variables to which the analysis is most sensitive (such as valuation, number of pupils, build-out rate) should be identified, and the analysis should include a range of values (high, medium, and low) for each key variable.
- All findings should be presented in constant-dollar terms.
Resources


Capital Budget and Program: The State of Vermont has an interactive workbook and video on capital budgeting. The workbook and video are free, but renting the video requires a refundable $50 deposit. Contact the Vermont Department of Housing and Community Affairs, National Life Building, Drawer 20, Montpelier, Vermont 05620-0501: 802-828-2928.


There are two valuable tools recently released by the Ministry of Municipal Affairs and Housing of the Province of Ontario, Canada. The Municipal Capital Budgeting Handbook provides local officials with a complete overview of capital budgeting rules and procedures. The Ministry also has developed a budgeting software program, to be used with Microsoft Excel. To download the Municipal Capital Budgeting Handbook and its companion budgeting-software program, go to: www.mah.gov.on.ca/business/BudgHandbk/index-e.asp.

Rural Services Policy: One example of a statewide “Code of Country Living” was developed by the Illinois Farm Bureau, and can be viewed at www.fb.com/ilfb/specfiles/codecountry.htm.

See also Board of County Commissioners, The Code of the West, The Realities of Rural Living, Larimer County, Colorado, P.O. Box 1190, Fort Collins, CO 80522.


MORE RESOURCES

From the Vermont Forum on Sprawl

Exploring Sprawl, a six-part series on sprawl research in Vermont:
1. Vermonters’ Attitudes on Sprawl
2. What is Sprawl in Vermont?
3. The Causes and Effects of Sprawl in Vermont Communities
4. The Impacts on Sprawl of State Investment and Policies
5. The Costs of Development: Downtown vs. Open Spaces
6. Economic, Social, and Land Use Trends Related to Sprawl in Vermont

More in the “Way to Grow!” series:

No. 1: The Vermont Smart Growth Scorecard
This community self-assessment tool provides questions local planners and citizens can ask themselves to see where their town stands on the sprawl to smart growth continuum. It is a valuable guide for updating town plans and regulations and encouraging citizen involvement. Free
Education partner: The Orton Institute
Available: now.

No. 2: Growing Smarter: Best Site Planning for Residential, Commercial & Industrial Development
This handbook provides communities, developers, non-profit groups and others interested in smart growth with a set of best development practices for residential, commercial and industrial development—practices that characterize and promote “smart growth” as a viable alternative to sprawl. Examples are included to illustrate that smart growth is happening in Vermont and around the country. Free
Education partner: The Orton Institute
Available: now.

No. 3: Growing Smarter: Making Smart Growth Work
This report describes how to make the local planning and permitting process work better for Smart Growth projects. Following the techniques, communities can provide incentives for best site planning practices. Free
Education partner: The Orton Institute
Available: now.

No. 4: Community Rules: A New England Guide to Smart Growth Strategies
This guidebook, co-authored by the Vermont Forum on Sprawl and the Conservation Law Foundation, provides standards for regulations that reinforce smart-growth principles in town centers, suburban settings, and rural communities. It contains examples of good zoning, ideas on how to get certain provisions accepted, and the techniques for applying standards. $20 for VFOS supporters and CLF members; $25 for others.
Project partner: The Conservation Law Foundation.
Education partner: The Orton Institute
Available: now