



# GROWING SMARTER

Best Site Planning for Residential,  
Commercial & Industrial Development



A "WAY TO GROW!"™ publication from the Vermont Forum on Sprawl

# GROWING SMARTER—BEST SITE PLANNING FOR RESIDENTIAL, COMMERCIAL & INDUSTRIAL DEVELOPMENT

*prepared by*

The Vermont Forum on Sprawl

*with a grant from*

The U.S. Environmental Protection Agency

*with additional support from*

The Orton Institute

The Champlain Initiative

Chittenden County Regional Planning Commission

“Way to Grow!” is a series of publications by the Vermont Forum on Sprawl designed to help communities plan for growth. *Growing Smarter—Best Site Planning for Residential, Commercial & Industrial Development* is the second in the series. Other publications include *The Vermont Smart Growth Scorecard* and *Better Bylaws, Better Communities*. For details, see resources on page 20. Additional copies of this publication are available from the Vermont Forum on Sprawl at \$10.00 each.

## PROJECT MANAGER

Dana Farley

## PROJECT CONSULTANTS

Burnt Rock Inc. Associates in Community Planning/Sharon Murray and Brian Shupe, Waitsfield, VT.

Terra Firma Urban Design/Julie Campoli, Burlington, VT.

## STEERING COMMITTEE

Robert Bast, Bast & Rood Architects

Terry Boyle, T.J. Boyle & Associates

Paul Bruhn, Preservation Trust of Vermont

Michael Crane, Chittenden County Regional Planning Commission

Bart Frisbie, Sterling Construction

Steven Holmes, Vermont Natural Resources Council

Penrose Jackson, Champlain Initiative

Lee Krohn, Vermont Planners Association

William Niquette, Winooski Development Corporation

Larry Williams, Redstone Commercial Group

John Winter, U.S. Department of Housing & Urban Development

## DESIGN

Liquid Studio/Lisa Cadieux

Burlington, Vt.

## VERMONT FORUM ON SPRAWL

110 Main Street

Burlington, VT 05401

tel: 802 864-6310

fax: 802 862-4487

email: [info@vtsprawl.org](mailto:info@vtsprawl.org)

Web site: [www.vtsprawl.org](http://www.vtsprawl.org)

March, 2001

© Vermont Forum on Sprawl

Photos ©Terra Firma Urban Design or Burnt Rock, Inc., unless otherwise noted.

# I. Introducing the Growing Smarter Site Planning Handbook

## WHY A HANDBOOK?

**Growing Smarter — Best Site Planning for Residential, Commercial & Industrial Development** is the second in the “Way to Grow!” series of tools prepared for community use by the Vermont Forum on Sprawl (VFOS).

Our aim in producing this handbook is to provide communities, developers, nonprofit groups and others interested in smart growth with a set of **best development practices** (Part II) for residential, commercial and industrial development — practices that characterize and promote “smart growth” as a viable alternative to sprawl. Specific examples are included to illustrate that smart growth development is not just a possibility — it’s happening here in Vermont and around the country.

Also presented is a summary of **best development processes** (Part III) for addressing common barriers to smart growth. These include recommendations for how municipal officials and boards, landowners and developers, and local citizens can more effectively participate in planning and development review processes to promote smart growth.

## 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 VFOS (*Vermonters’ Attitudes on Sprawl. Exploring Sprawl #1*) indicate that Vermonters believe:

**Communities should consist of compact settlements with access to preserved open land, surrounded by a working landscape.** This is consistent with Vermont’s traditional development pattern, and a statewide goal to promote the development of compact village and urban centers surrounded by open countryside.

**Patterns of scattered low density or strip development, characterized as ‘sprawl,’ are detrimental to this desired pattern of growth and, though common, are not inevitable.**

Undesired aspects of development most identified with sprawl include commercial strip development, large paved areas (roads, parking lots), 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 the fabric and character of the community.

While the term “smart growth” is new, the concept is not. The difference between today and the 1960s when I began working on the issue as a State Senator in the Vermont legislature, is the recognition of an unprecedented fork in the road. One road leads to unchecked growth, devouring open countryside. The other leads to growth that will strengthen communities and preserve the working landscape.

SENATOR JAMES JEFFORDS  
“Smart Growth: A View from Capitol Hill”, *Planning Commissioners Journal*, Summer 2000

Survey findings indicated that many Vermonters want communities that have a mix of stores and services within walking distance of a variety of housing options, connected by sidewalks and bike paths, and access to public transportation. Instead, most current development patterns continue to devour land and resources, destroy community character, segregate people and uses, and remain auto-dependent, pedestrian unfriendly and inaccessible to those without reliable transportation. There is increasing awareness, around the state and nationwide, that current forms of development are at best inconsistent with desired patterns of growth, and because of their fiscal, social, and environmental costs, are at worst unsustainable.

## HOW CAN WE GROW SMARTER?

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 the “Way to Grow!” series and the best development practices and processes included in this handbook.

### Vermont Forum on Sprawl Smart Growth Principles

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 through economic and residential growth that is targeted 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 mode of transportation available and insure that transportation options are integrated and consistent with land use objectives.
4. Protect and preserve environmental quality and important natural and historic features of Vermont, 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 most rapidly growing.
8. Support a diversity of viable business enterprises in downtowns and villages, including locally-owned businesses, and a diversity of agricultural and forestry enterprises in the countryside.
9. Balance growth with the availability of economic and efficient public utilities and services and through the investment of public funds consistent with these principles.
10. Accomplish goals and strategies for smart growth through coalitions with stakeholders and engagement of the public.

The first step toward growing smarter, as presented in the companion VFOS publication, *The Vermont Smart Growth Scorecard*, is to assess how well your community is prepared to respond to the pressures of growth. The scorecard can be used to evaluate whether local plans, policies and regulations foster smart growth in accordance with the principles, or encourage sprawl.

The next step — the subject of this handbook, *Growing Smarter—Best Site Planning for Residential, Commercial & Industrial Development* — is to recognize how smart growth principles may be applied to the development of a particular site, and to address potential procedural barriers to such development.

A supplemental publication, which includes more detailed information on best development processes, is available through the VFOS.

The final step is to address regulatory barriers to smart growth. The next publication in the “Way to Grow!” series — *Better Bylaws, Better Communities* — produced in association with the Conservation Law Foundation, provides a useful guide to the crafting of local smart growth regulations.

Subsequent VFOS publications in this series will provide more specific information on infill development, new models for commercial and industrial development, and smart growth public investment strategies.

---

## II. Best Development Practices

**G**rowing smarter means applying smart growth principles to the siting, layout and design of new development in a way that enhances our communities and the environment. For the development of individual sites, this involves the application of **best development practices** to site layout and design. Best development practices, compiled from a variety of sources and adapted for use in Vermont, are presented here in association with the following site planning guidelines that incorporate smart growth principles.

Examples of practices are included under each guideline to demonstrate that smart growth, incorporating one or more best development practices, is not just a possibility — it’s happening here in Vermont, and around the country. For illustrative purposes, consideration is given to three general categories of development — **residential, commercial and industrial** — within three broad contexts or settings — **urban areas** (cities, villages and other designated growth centers), **rural areas**, and the growing fringe between the two — **suburban** or “**new growth**” areas.

### Smart Growth Site Planning Guidelines

- **Concentrate development** to maintain Vermont’s traditional compact settlement pattern and make more efficient use of land, infrastructure and resources,
- **Incorporate a mix of uses** to provide a diversity of housing, employment, shopping and social opportunities for all members of the community,
- **Provide transportation options** to increase accessibility for pedestrians, cyclists and the transportation disadvantaged, as well as motor vehicles,
- **Preserve the working landscape** to sustain productive farm and forest land and other rural resource lands, to maintain contiguous tracts of open land, and to minimize use conflicts in rural areas,
- **Foster a human scale** of development that maintains the traditional character of Vermont’s downtowns, villages, and neighborhoods, and is comfortable for pedestrians, and
- **Protect environmental quality** by incorporating “green infrastructure” in site design, preserving natural areas, and creating attractive and pleasant community environments.

## CONCENTRATE DEVELOPMENT...

to maintain Vermont's traditional compact settlement pattern and make efficient use of land, infrastructure and resources.

**V**ermont's traditional settlement pattern of compact villages surrounded by open farm and forest land reflects an efficiency borne of necessity and tradition, and remains a highly valued — and highly promoted — representation of small town life.

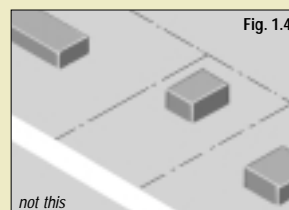
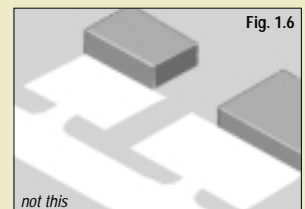
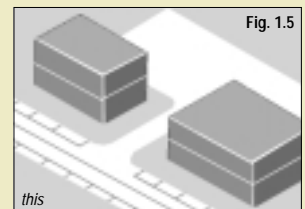
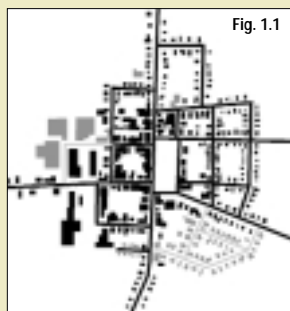
As documented in the VFOS's *Exploring Sprawl* series, in rapidly growing areas of the state this settlement pattern is being eroded at the edges by scattered, strip and leapfrog development — patterns of suburban development that extend far into the countryside and blur any clear distinction between developed and open land. Such growth results in the loss of community character and identity, the decentralization of community facilities and services, the undermining of traditional urban and village centers, and the unnecessary loss and fragmentation of valuable natural resources. It also comes with a hefty price tag — straining state and municipal budgets to extend roads, infrastructure and services into previously undeveloped areas.

“Sprawl costs us all” — a rallying cry for smart growth initiatives nationwide — highlights the fact that sprawl is an inefficient, consumptive, heavily subsidized form of development. Fragmented patterns of suburban and exurban development do not serve our environment, our communities, or our pocketbooks very well. Growing smarter means growing more efficiently and cost effectively by:

### Practices

- Site new development in or immediately adjacent to existing settlements consistent with historic densities and patterns — avoid patterns of leapfrog and strip development. (Fig. 1.1)
- Develop at high densities — minimize lot area, maximize building coverage and floor area ratios — on sites served by municipal infrastructure (i.e., within designated service areas). (Fig. 1.2-1.4)
- Build multi-story structures — increase density in downtowns and village centers by building up rather than out. (Fig. 1.2-1.4)
- Site buildings close to the street, and close to each other — minimize lot frontage and setbacks. (Fig. 1.2, 1.3, 1.4)
- Integrate higher density, mixed-use development into moderately developed, single — use areas through infill and redevelopment. (Fig. 1.3-1.4)

- Minimize on-site parking — incorporate shared access, and shared and on-street parking in site design. (Fig. 1.5-1.6)
- Where density allows, build compatible parking structures instead of at-grade lots.
- Restore and reuse existing buildings.
- Maintain a continuous, well-defined edge between existing development and adjoining open land — site new structures next to existing structures.



### Maintaining Traditional Patterns of Compact Development

This includes siting commercial, industrial and most residential development within or immediately adjacent to existing settlements — through the adaptive reuse of old buildings, strategic infill development, “brownfield” (contaminated site) development, and suburban redevelopment — or within newly designated growth centers served by central infrastructure.

It also involves extending and incorporating traditional patterns of development — including the “footprint” and “grain” (street network, density, lot size and configuration) — to neighboring sites to be developed or redeveloped.

### Maximizing Density within Growth Areas

Maximizing the density of development within clearly delineated growth or infrastructure service areas promotes more efficient use of land and infrastructure capacity, accommodates densities needed to support a variety of uses and services, allows for affordable housing development, and protects, or holds in reserve, adjoining open land.

### Delineated Growth Boundaries

Delineated growth boundaries also serve to establish a distinct, unbroken visual and physical edge between the built environment and surrounding open land — interrupted only by distinct entrances or “gateways” into the community. Municipalities such as South Burlington, Essex and Williston are counteracting inefficient patterns of development by designating new town centers, and adopting related policies and programs that promote compact, higher density, mixed use development within areas supported by infrastructure.

## Project Examples

### Downtowns

The following examples illustrate how new development can use land, facilities and resources efficiently. Each of the projects was located in a previously developed area, served by existing municipal sewer, water, streets and sidewalks. They demonstrate how to “build up rather than out” by maximizing the space available on small urban sites.



**Chittenden Bank, Montpelier, VT**  
When the Chittenden Bank needed more space for its Montpelier operations, it replaced a single story bank branch with a 5-story office building. Although the new building retained a drive-through function, its wider frontage and upper level stories makes greater use of the available site.



**Filenes Department Store, Burlington, VT**  
Filenes fit 150,000 square feet of retail space into a downtown site that had long been underutilized as a surface parking lot. Close to existing businesses, neighborhoods, and the heart of a regional public transit network, this location takes full advantage of alternative transportation. The retail space is divided into 2 levels and the 400-car parking lot is stacked in an adjacent, mid-block structure that also serves other buildings.



**State Office Building, Newport, VT**  
This new 3-story building is located in downtown Newport, connecting the main shopping street with the waterfront. The result of a public / private development effort, it houses a bank branch, law office, coffee shop and other retail businesses, as well as state offices. A parking lot beside the building is shared by many other downtown uses.



**Elm Street Apartments, Montpelier, VT**  
This building sits on a narrow parcel but it maximizes the space available by covering the lot and using four levels. By extending the traditional pattern and density of the surrounding neighborhood, it provides many housing units in a centrally located neighborhood.



**Seven Lebanon Street, Hanover, NH**  
When the town of Hanover and Dartmouth College’s Real Estate Office combined parcels to build a municipal garage, they added more than just parking to the downtown. They combined a 289-space parking structure with a three-story retail and office building, adding 45,000 square feet of commercial space. This site was formerly a surface parking lot and small drive-through bank. Its well-proportioned facade fits the context of its surroundings. The display windows and doors that line the building add appeal for pedestrians.



**Stacked parking, The Berkleyan, Berkeley, CA**  
This innovative technology provides a less expensive and space-consuming alternative to conventional parking structures. Easy-to-use electric lifts raise and lower cars to floor level. The developer has installed over 100 of these lifts in his buildings and has another 200 coming on line. The lifts require little maintenance and the concept has met no resistance among tenants.



**Gregory Supply, Burlington, VT**  
This building supply company was able to expand from 30,000 to 45,000 square feet, by making better use of its small urban site. Stacking lumber along two levels helped the owners maximize display area and provide a tighter layout than their big-box counterparts.

### Villages

These projects also use land efficiently but, because the context is a village rather than a downtown, they are smaller in scale. Like their downtown counterparts, these projects are located in town centers. They take advantage of existing infrastructure: streets, sidewalks and available utilities.



**Railroad Street Housing, Richmond, VT**  
This new extension of an existing village street provides homes within walking distance of Richmond village. The project consists of duplexes on small lots with a density of 8.4 units/acre.



**Lantman's IGA, Hinesburg, VT**  
As it expanded to meet the needs of contemporary food marketing, the grocery store in Hinesburg stayed in the center of the village. Rather than demolishing the original structure, Lantman's renovated and re-used it, adding on to the rear. Parking was placed on the side and is shared with a neighboring building. Offices occupy the upper stories of the building.



**Pilgrim Park, Waterbury, VT**  
Located adjacent to Waterbury Village, Pilgrim Park sits on industrial land that had been vacant for several years. Limited access prevented development until the municipality assisted with the construction of a new road, sidewalks and streetscape improvements, which connect the area to the village core. Currently occupied by a multi-story, mixed-use office and industrial facility, and a successful coffee processing facility, recent acquisition of an adjacent parcel provides an opportunity for a doubling of floor space within the park.



**Norwich Square, Norwich, VT**  
Two historic buildings were re-used and three new ones were added in the redevelopment of this site. As elsewhere in Norwich, buildings sit close together and close to the street, offering a mix of commercial uses within a small area.

### Suburbs

Suburban growth is characterized by low-density development that jumps beyond the bounds of existing settlement. Widely-spaced suburban buildings, typically one-story and sited in the center of large lots, often require excessive infrastructure. Recently, however, a few projects in suburban settings set an example of greater efficiency. They add density to areas that already have streets and utilities in place but are underused.



**New Street, South Burlington, VT**  
Part of South Burlington's City Center district, this new street and multi-story hotel helps the city achieve its long-term goal of a compact center. The hotel was constructed within one block of an emerging grid of streets along the city's main commercial road. As each parcel in the area is redeveloped, the density is increased and a segment of the street network is completed. This new street connects with an adjacent residential street.



**Infill Building, Berlin, VT**  
This new building helps to fill in one of many gaps left by commercial strip development along the Barre-Montpelier Road. Unlike the buildings around it, this one sits close to the street and is two stories high. The developer of this project added density to an underused area and gave new life to this vacant site which had formerly contained a dilapidated, one-story structure.



**Essex Town Center, Essex, VT**  
This new building is the first in a series planned for Essex's emerging town center. The overall plan is compact, with multi-story buildings, and connecting streets and sidewalks. This building contains stores on ground level and affordable housing units in two levels above.



**Mashpee Center, Mashpee, MA**  
This redeveloped shopping center on Cape Cod is growing into a mixed-use center, complete with apartments, shops, cinemas, restaurants and a post office. More housing is planned in compact neighborhoods surrounding the core.

### Countryside

Projects that use land efficiently in the countryside are located at crossroads hamlets, or other existing settlements, in a compact, traditional pattern. They often re-use and expand existing structures, rehabilitating historic buildings.



**General Store, Morrisville Corners, Morristown, VT**  
This business is typical of many stores found at rural intersections in Vermont. The general store is the traditional counterpart to the contemporary convenience store. While both provide a neighborhood service, general stores are locally owned and offer a wider range of goods within small quarters.



**Waitsfield Common, Waitsfield, VT**  
These houses on small lots are typical of a residential crossroads hamlet. They are arranged around a small green, in the middle of a rural area. This older, more compact and efficient housing pattern is an appropriate model for new rural residential development.



**Restored barn, Richmond, VT**  
This barn was restored and adapted to new uses. It currently provides space for a construction company and woodworking shop.



**Smugglers' Notch Resort, Jeffersonville, VT**  
The condominiums and shops of Smugglers' Notch Resort are located close together within a small radius. Densities are high here. Most of the buildings and activities are confined to a central core area. Except for some recent development that has crept up the hillside along the ski slopes, the edge between development and adjoining land has been maintained.

## INCORPORATE A MIX OF USES...

to provide a diversity of housing, employment and shopping and social opportunities for all members of the community.

**A**t one time most people could walk to work, school or the corner store. The physical separation of uses is now common, and often required by local land use regulations. As a result, many of us live in residential developments far removed from employment, shopping and community centers. Current development patterns isolate us from our daily tasks and from each other. This segregation of land use reduces community diversity and social interaction, and limits individual options — particularly for those lacking reliable transportation. Growing smarter means finding ways to reintegrate, within each of our communities, more inclusive types of development that address everyone's needs for housing, employment, goods, services, and social interaction. This includes:

### Providing “Life Cycle” Housing

Residential developments, unlike traditional neighborhoods, typically serve only one household type and income group. By design they exclude households that don't fit a particular demographic profile. But the demographics are changing — with the aging of the baby boom population, ethnic diversification, and smaller households that reflect new lifestyles and living arrangements. Changing markets afford opportunities to develop more traditional neighborhoods that incorporate a mix of housing types — including granny flats and garage apartments, detached, attached, and multi-family units, and apartments above stores. A variety of housing allows people in different life stages to remain in the same community, and promotes social diversity and interaction.

### Bringing Back the Corner Store

Driving miles for a loaf of bread and a quart of milk is now commonplace, but it's not a viable option for children, seniors, and other transportation disadvantaged who can't drive. Providing goods and services in the local mix of uses can make life easier for everyone by providing options close by, and a greater degree of physical independence. It also lessens automobile dependence, supports smaller, pedestrian-oriented businesses, and can generate more tax revenues for the community.

## Contributing to the Region's Jobs-Housing Balance

Communities today typically promote themselves as good places to live and work, but in reality most serve as bedroom communities to a few regional job centers. Indicators such as job to housing ratios, vehicle miles traveled, and commuting times suggest growing regional disparities between where people work and live. Many workers can't afford to live where they work — too often the lowest paid workers have to travel the farthest distances for employment. Mixed use development can help balance the local jobs-housing mix — by providing employment opportunities where people live (including home occupation and live-work arrangements) and housing opportunities where they work.

### Putting the “Neighbor” Back in Neighborhoods

Private developments typically exclude civic uses and public spaces that foster a sense of community. There are no formal or informal gathering places — places which, in traditional neighborhoods, strengthen the sense of community by bringing people together to socialize and interact. Larger developments around the country now include central sites for schools, churches, libraries, public parks and local gathering spots. Even Vermont's smallest villages offer the example of inviting, well-defined streetscapes, central greens, and community spaces that serve as venues for informal meetings and organized public events. Incorporating civic places on-site, and physical connections to such places off-site, can help foster a sense of neighborliness and community that is presently lacking in many private developments.



## Practices

- Accommodate a mix of uses on site and within individual buildings.
- Site new residential neighborhoods within walking distance of commercial and employment centers.
- Locate new commercial development within compact downtown, village or new growth centers; incorporate neighborhood commercial development in mixed-use developments or within walking distance of existing residential neighborhoods.
- Plan in-fill development to address local needs for housing, goods and services (e.g., a neighborhood store, day care facility).
- Provide a mix of market rate and affordable housing types, including multi-family, smaller single family and accessory dwellings (e.g., guest houses, in-law or garage apartments) in neighborhood and mixed-use developments.
- Site higher density multi-family senior and affordable housing in or adjacent to downtowns and commercial centers.
- Incorporate upper floor apartments above commercial uses.
- Incorporate well designed, landscaped green space.
- Include seasonal employee housing in new resort development.
- Incorporate home office space (live-work arrangements) in residential design.
- Site new industrial and office park development within or adjacent to urban and village centers.
- In larger developments, set aside central lots and common areas to accommodate public, personal service, and neighborhood commercial uses. Incorporate an internal network of greens, commons and pocket parks.
- Incorporate a linked network of greens, commons and parks for outdoor recreational use.

## Project Examples

### Downtowns & Villages

These projects uphold the tradition of diverse uses and housing types in a downtown or village setting. They incorporate a neighborhood need for housing by offering upstairs apartments, or they provide space for a wide range of businesses.



**Park Place, Burlington, VT**

This project rehabilitated a historic but rundown building in the heart of Burlington, replacing substandard apartments with higher quality housing. 34 units of affordable housing now occupy the two floors above retail stores and offices.



**Howe Center, Rutland, VT**

This site, originally a scale manufacturing plant, is 1/2 mile south of downtown. The buildings were vacant until recently redeveloped into a commercial center containing a mix of retail, office and industrial space offering a broad array of services to the surrounding area.



**Infill building, Randolph, VT**

This project combines affordable housing and retail on Main Street in Randolph. It replaces an older building, destroyed by fire, with a new one of similar size and density.



**Mad River Shopping Center, Waitsfield, VT**

Unlike many new retail and bank buildings, these two in the Mad River Green Shopping Center include upstairs apartments, offering residents a convenient village location. They are part of an overall plan to add diverse commercial and residential space to Waitsfield's emerging satellite village.



**Infill building, Arlington, VT**

A new building in the center of Arlington Village houses offices and upstairs apartments.



**Park & Wheelock Rental Housing, Hanover, NH**

This infill project combines existing and new multi-family structures into a more dense and diverse neighborhood block. 22 new units were added to the 16 already on site. They include duplex town homes, four-plexes, and a larger 8-unit building. The development offers a range of modestly priced units within walking distance of downtown Hanover.



**Railroad Street Housing, Richmond, VT**  
New duplexes in Richmond feature an attached office/studio for home occupations. These affordable units are located on a new residential street close to the village center

### Suburbs

These suburban examples introduce a measure of diversity to a traditionally homogenous environment. The incorporation of new uses and different building types



**Gale Farm Center, Stowe, VT**

Unlike many shopping centers, this one in Stowe has apartments above the row of shops. These apartments help fill a need for affordable housing in this resort community.



**The Pines, South Burlington, VT**

This 124-unit senior housing development is located within walking distance of the commercial heart of South Burlington. It adds density and an alternative housing type to what was a low-density area. New sidewalks connect the apartments with businesses and bus stops along Dorset Street.

## PROVIDE TRANSPORTATION OPTIONS...

to increase accessibility for pedestrians, cyclists, and the transportation disadvantaged, as well as motor vehicles.

The old Vermont adage, “You can’t get there from here,” applies just as well to more contemporary road networks that elevate the dead end and cul-de-sac to an art form. Wide, curving streets, engineered for cars and trucks, meander through subdivisions without clear destination and dump traffic onto increasingly congested thoroughfares. To avoid traffic, houses are arranged around disconnected, dead end streets that, by definition, don’t go anywhere. The result can be a highly inaccessible, disorienting landscape, particularly for non-motorists. Growing smarter means increasing accessibility by re-establishing physical connections, and better accommodating alternative means of getting around. This can be accomplished by:

### Incorporating Variations on the Grid

Internal roads and pathways can serve to link rather than divide communities by providing a coherent, user-friendly transportation network, and a logical framework for development. A prime example is the traditional grid network of streets, which connects and serves immediately adjoining land uses, disperses traffic, and is convenient for pedestrians and cyclists. Integrating new roads and paths into existing networks increases “connectivity” and improves accessibility — grids offer a selection of comparatively direct routes.

### Introducing Traffic Calming

Short blocks, abrupt changes in road alignment, T-intersections, decreased right-of-way and street widths, street trees, on-street parking and shared use of lanes, all serve to decrease traffic speeds — and the number and severity of accidents. The installation of pedestrian-oriented traffic calming elements — such as sidewalks, “bump-outs,” mid-block crossings, and raised crosswalks also makes for a friendlier street environment.

### Providing for Alternate Modes

New development cannot exclude motor vehicles — cars and trucks are a fact of life that will be around for some time to come. It can, however, be designed to lessen our collective automobile dependence — by building at densities sufficient to support convenient public transit systems, providing transit facilities on-site, incorporating other modes of travel into street design, and giving pedestrian accessibility and circulation as much, if not more, consideration as vehicular circulation. On a smaller scale, all new developments can be made more pedestrian, handicapped and cyclist friendly — by providing a local network of sidewalks or paths on-site, and by incorporating connections to adjoining development and regional on- and off-road networks.

## General Guidelines\* for Pedestrian- and Transit-Friendly Design

### STREETS

Maximum Design Speeds	20 mph for local streets 35 mph for collectors
Residential Street Width	18 feet (curb to curb)

### TRANSIT-ORIENTED DENSITIES

Residential	7 units/acre minimum 15 units/acre to 100 units/acre premium (depending on size of community and presence of rail)
Employment	50 employees/acre

### PEDESTRIAN-ORIENTED DESIGN

Walking Distance	1/4 mile radius (10 to 15 minutes)
Block Length	300-500 feet
Sidewalks	
Arterials/Collectors	Both sides
Local Commercial	Both sides
Local Residential	Both sides for >4 units/acre One side for 1-4 units/acre None for <1 unit per acre
Width	5-6 feet for light pedestrian traffic

\* Intended for general reference purposes only: smart growth models emphasize that all street and pedestrian networks, including individual blocks or segments, should be designed in relation to their particular setting and function.

Source: Reid Ewing, *Best Development Practices*, published by the American Planning Association, Chicago, Illinois, 1996.

## Practices

- Organize streets in a coherent network — relate street design to the land uses they serve. (Fig. 3.1-3.2)
- Maximize the density and mix of development located within walking distance of neighborhood services and public transit service — include transit facilities on-site (e.g., enclosed or covered waiting areas with benches). (Fig. 3.1-3.2)
- Integrate new roads with the existing street network; maintain variations on the grid. (Fig. 3.3)
- Maintain street connectivity — incorporate connecting and loop roads rather than dead-end streets and cul-de-sacs in the street layout. (Fig. 3.3-3.4)
- Incorporate future road, pedestrian and parking connections to adjoining parcels. (Fig. 3.5-3.6)
- Design development to be pedestrian friendly. Incorporate convenient pedestrian access and circulation in site and street designs. (Fig. 3.7-3.8)
- Except in rural areas, provide continuous sidewalks or paths along at least one side of a street — minimize curb cuts, and incorporate well-defined pedestrian crossings in high traffic areas.
- Minimize block lengths, or provide mid-block pedestrian crossings, and off-street paths to adjoining streets.
- Provide an internal network of pathways — incorporate off-street shortcuts for walkers and bicyclists.
- Design downtown, village and neighborhood streets for slow vehicle speeds — incorporate innovative road geometry (e.g., T-intersections, forks and triangles, round-a-bouts), and other traffic calming devices.
- Minimize lot frontage and the spacing between buildings to reduce walking distances.
- Include bicycle racks and/or lockers on-site.
- Incorporate lanes or service alleys to provide rear or mid-block access to lots and parking areas, particularly for commercial development.
- In rural areas incorporate a network of on- and off-road walking and recreational paths, to connect buildings and uses, and to provide access to adjoining open land and regional trail networks.

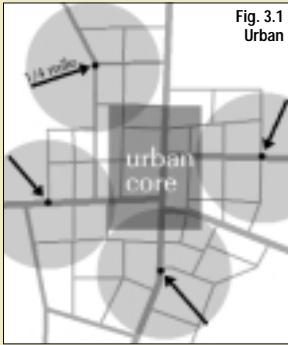


Fig. 3.1  
Urban

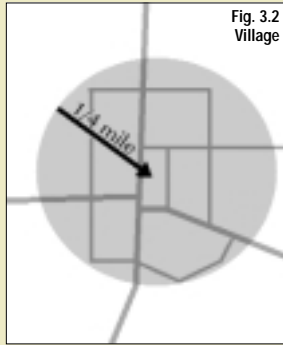


Fig. 3.2  
Village

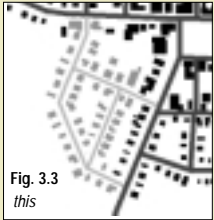


Fig. 3.3  
this

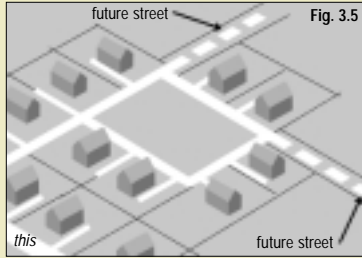


Fig. 3.5

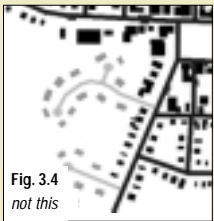


Fig. 3.4  
not this

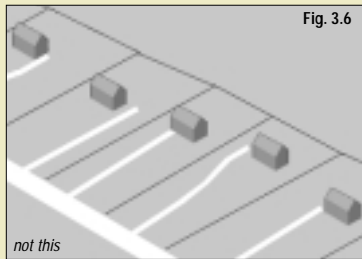


Fig. 3.6

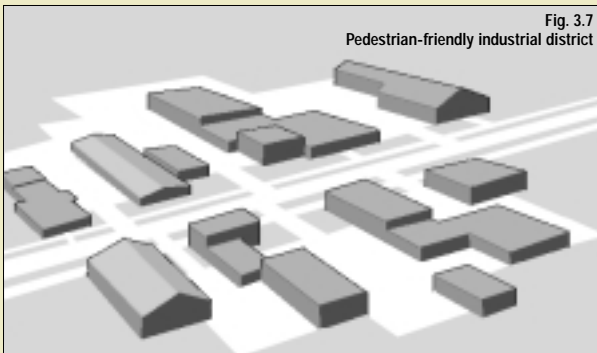


Fig. 3.7

Pedestrian-friendly industrial district

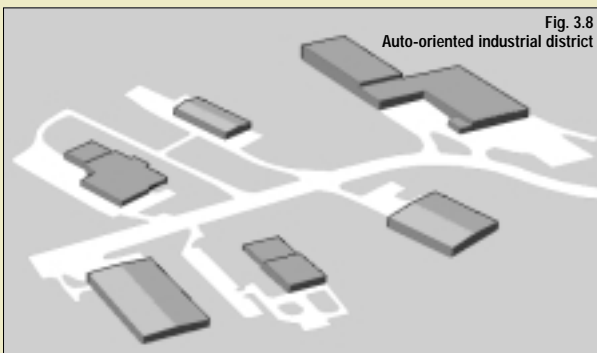


Fig. 3.8

Auto-oriented industrial district

## Project Examples

### Downtowns & Suburbs

These downtown and suburban projects provide transportation options by adding density at public transit stops, extending an interconnected street or path network, or incorporating pedestrian and bicycle amenities.



#### New Sidewalk, Stowe, VT

The sidewalk, street trees, fence, landscaping, and parallel parking along this new village street, create a comfortable environment for walking. These features combine to buffer the pedestrian space from the adjoining street and parking lot.



#### Main Street Landing, Burlington, VT

This redevelopment project restored the old Burlington train station to serve a brand new commuter line. Trains arrive and depart from the rear of the building, city buses stop at the front. There are bike racks as well as showers for bicyclists. This building restoration was part of a larger redevelopment of the waterfront block that added both commercial and residential density to a location served by public transit.



#### 100 Dorset Street, South Burlington, VT

The developer of this shopping area added several amenities that encourage the use of public transit. Benches, street trees, and a shelter provide a resting place along a bike path and sidewalk. This design makes it easier and more comfortable to take the bus, walk, or bike.



#### Mid-block connection, Burlington, VT

When a large department store and parking garage was built on an urban renewal site, the developer constructed a mid-block path, connecting two streets, three parking areas and several businesses. The path offers a convenient shortcut for pedestrians and cyclists, making it easier to move about this area of downtown without a car.



#### Bike Path, Williston, VT

When this neighborhood was laid out, a corridor of land was set aside as a right-of-way to adjoining public land and a nearby school. This path along that right-of-way provides an off-road link and a direct short cut for pedestrians and bicyclists.

## PRESERVE THE WORKING LANDSCAPE...

to sustain productive farm and forest land and other rural resource lands, to maintain large, contiguous tracts of open land, and to minimize use conflicts.

**B**ased on population distribution, Vermont is one of the most rural states in the country. Our rural landscape embodies a highly revered tradition of people working on the land, but in many parts of the state productive farms and forests are rapidly giving way to scattered housing development, poplar and pucker brush. The attendant open space that provides the cultural, economic and visual backdrop for settlement patterns is being lost.

According to VFOS's *Exploring Sprawl* series, one example of rural or exurban sprawl is incremental, low density, large lot residential development located far from urban and village centers. Such development creates a variety of challenges because it must be served by on-site water and wastewater systems, occupies an inordinate amount of land, takes resource lands out of production, and results in land use conflicts that adversely affect farm and forestry operations. Growing smarter means preserving the working landscape, and associated open space by:

### Limiting Incompatible Uses in Rural Areas

Types of development best suited to rural areas are those that support and enhance the working landscape and a sustainable rural economy. However, given the common desire for a house in the country, and a changing rural economy, residential and other potentially incompatible development are rarely excluded from the countryside.

Growing smarter suggests that such development should be sited and designed to buffer and preserve productive land (e.g., through conservation easements), and to minimize use conflicts and visual impacts. The siting of more compatible types of use (see chart on right) should be carefully considered in relation to potential impacts on existing operations and the rural land base.

### Avoiding Fragmentation of Resource Lands

"Large lot" development of 1-, 2- or 5-acres or more per dwelling unit is typically considered a "rural" pattern of development, required under zoning to maintain rural character. In fact it promotes exaggerated, consumptive patterns of development that protect neither rural character nor the working landscape. The result has been residential lots that "are too small to farm, and too large to mow." Municipalities are beginning to distinguish density from lot size under local zoning, by requiring low overall densities of development and clustering on small lots.

The clustering of development under "conservation" or "open space" subdivision designs that maintain large tracts of open land is promoted as a means to preserve both rural character and productive open land. In Vermont this is most commonly accomplished through planned residential or planned unit development. Such subdivisions can more readily

incorporate traditional hamlet and village patterns of development. Clustering, however, is not, the answer to rural sprawl! In the broader context too many clusters create "cluster sprawl." Growing smarter, as noted previously, ultimately means concentrating development within, rather than outside of, designated growth areas supported by infrastructure.

"Compatible" rural land uses under local land use regulations are often defined to include...

- traditional uses, such as farming, forestry, mining and quarrying,
- housing for farm families and workers,
- contemporary resource-based uses, such as ski areas and other outdoor recreational facilities,
- cottage industries that add market value to raw resources,
- market outlets such as farm stands or community supported agriculture (CSA) that offer for sale, or by subscription, products produced on site,
- related services, such as veterinary services and development that enhances resource based uses, such as agri-tourism (farm stays, bed and breakfasts), or the adaptive reuse of historic barns for storage.

### Practices

- Limit new development outside of urban, village and designated growth centers to those uses that complement, or otherwise do not conflict with, resource-based uses of the land - including agriculture, forestry, quarrying and mining, and developed outdoor recreational uses (e.g., ski areas).
- Locate new development within or immediately adjacent to existing villages, hamlets and other built-up areas. (Fig. 4.1-4.2)
- Avoid inefficient, large lot development in rural areas — maintain an overall low density of development by clustering buildings on small lots laid out in traditional patterns (e.g., farmsteads, cross-road hamlets) that protect large contiguous tracts of open land and reduce the amount of supporting infrastructure required. (Fig. 4.3-4.4)
- Site necessary development and associated building envelopes, road and utility corridors, to avoid encroachments on or the fragmentation of resource land. (Fig. 4.3-4.4)
- Incorporate buffers between developed and resource lands to avoid conflicts between incompatible uses — maintain a well-defined edge between developed and open land. (Fig. 4.5)
- Integrate the preservation of open space, (e.g., through easements) — especially contiguous tracts of productive land when land is being subdivided. (Fig. 4.6-4.7)
- Define development and building envelopes to exclude open fields and other cleared areas, and exposed ridgelines and promontories — screen necessary but visually incompatible development (e.g., telecommunications towers) from public view. (Fig. 4.6-4.9)

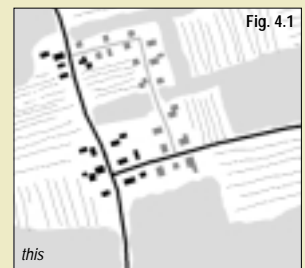


Fig. 4.1

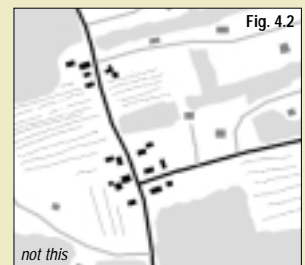


Fig. 4.2

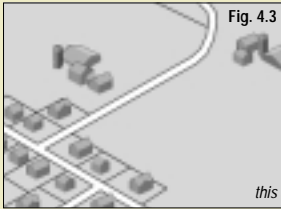


Fig. 4.3

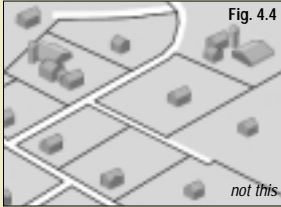


Fig. 4.4

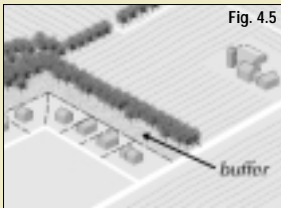


Fig. 4.5

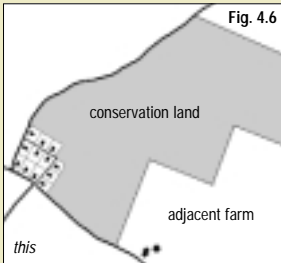


Fig. 4.6

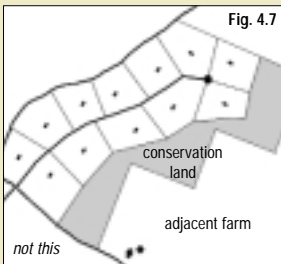
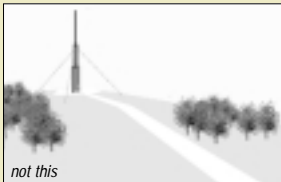
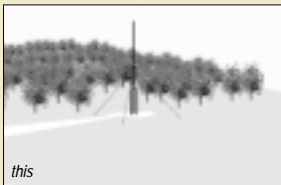


Fig. 4.7



## Project Examples

### Urban & Suburban

The following examples illustrate development that helps preserve the working landscape in urban and suburban settings, where a strong market for housing threatens resource land. They show development that complements or does not conflict with use of the land for agriculture, forestry, or outdoor recreation.



#### Intervale Farm, Burlington, VT

This 700-acre tract of land in the city of Burlington is home to several farms, businesses, and organizations that take advantage of its fertile soils and unspoiled environment while sustaining its natural resources. Uses include a municipal composting facility, organic farms, community gardens, an experimental waste treatment system, a gardening supply store, and a seed company. In addition, the regional park provides outdoor education and access for recreation.



#### Cobble Creek Nursery, Monkton, VT

This plant nursery, which grows wholesale trees and shrubs for the landscaping trade, is located in a small town. As nearby farms have been subdivided for house lots, this business has expanded from 10 to 31 acres, keeping the land open. Because half of its stock is field-grown, this business depends on the soil it sits on.



**Snow Farm Winery, South Hero, VT**  
Snow Farm consists of a vineyard and a winery. It is located in a growing rural town. A store complements the agricultural side of the business with wine tasting and sales. The site is also used for concerts in the summer.



**Ten Stones Community, Charlotte, VT**  
Members of this community in a suburban area set their 13 houses on half-acre lots, so they could use the remaining acreage for a formal green, a woodlot, an engineered wetland that functions as an alternative septic system, and a community garden that serves other town residents. 40 acres of this 85-acre site is permanently protected through a local land trust. The single, shared road in the development, is narrow (14') and parking areas are minimal.



#### Trapp Family Lodge, Stowe, VT

Although this resort sits on 2500 acres of land, most of its buildings are clustered around a central core of no more than 40 acres. This development has successfully avoided encroaching on the forest that sustains its nordic skiing operation. As Trapps added housing units in the developed core, it placed forested tracts under permanent protection, donating easements on 1,100 acres of land.



#### Farm subdivision, Fayston, VT

When this hillside farm property was subdivided in this resort town, houses were sited away from open fields, exposed ridgelines and promontories. This practice kept the meadows intact.

### Countryside

The following examples show typical resource-based uses in rural areas.



#### Borderview Farm, Alburg, VT

This dairy farmer also raises ostriches and has an additional home business.



#### Clear Brook Farm, Shaftsbury, VT

The owners of this farm raise organic vegetables and bedding plants. A conservation easement permits two house sites on the 144-acre parcel. The rest of the land will remain open.



#### McGuire's Furniture, Isle LaMotte, VT

McGuire's re-used this historic farmhouse and adapted it as a woodworking studio. This is a family-owned, home-based business, manufacturing custom furniture sold worldwide.

## FOSTER A HUMAN SCALE...

that maintains the traditional character of Vermont's downtowns, villages, and neighborhoods, and is comfortable for pedestrians.

**A**utomobile-oriented development effectively eliminates people from the landscape. The car becomes the primary design element — resulting in vast wastelands of parking around commercial, office and industrial uses, and residential streets dominated by unsightly garage doors. Despite or because of current land use regulations, much contemporary development is scattered about, seemingly without rhyme or reason, in deference to the mobility afforded by the car. The result is an inhospitable, uninviting landscape devoid of much human activity. Growing smarter means:

### Designing for People

New development can put people back into the equation by developing new streets, buildings, neighborhoods and towns at a more traditional, human scale. This means incorporating such measures as the space a person occupies, the reach of normal social interaction, the distance someone can comfortably walk, and the scale of buildings in relation to a person's physical and visual frame of reference while walking down the street.

Traditional Vermont development patterns provide a compelling framework for the design and layout of new buildings and associated streetscapes. Analyses of Vermont's traditional villages and urban centers, and historic maps that track their development, reveal a surprising consistency in the scale, form, orientation and spacing of buildings — patterns that predate the automobile and local land use regulations. This suggests that significant consideration was given to the "fit" of new buildings to their surroundings, in relation to their intended purpose.

**The Pedestrian Realm** Since buildings frame the streetscape, building height as defined in proportion to streetscape width (facade to facade) becomes a key pedestrian design element. The maximum proportion developed in Renaissance of 1:6 — for every foot of building height there should be no more than 6 feet of space in front — is still used to define public buildings and civic space. For a New England village or urban streetscape, with building heights ranging from 2 to 6 stories, a ratio of 1:1 or 1:2 is more typical and pleasing for pedestrians.

Traditional layouts define and integrate public and private space. The orientation, height, setback and spacing of buildings — and building features such as rooflines, doors, and windows — visually define the streetscape, and create a rhythm of development scaled to the person moving through on foot. Private and public spaces are blended in a "transition zone" created by storefronts, street furniture, front yards and front porches. Parking areas are relegated to the side or rear of buildings.

### Designing for the Local Context

There is also remarkable consistency in traditional styles of development, which though of different historic periods, incorporate local design features that lend to the visual

cohesiveness of the Vermont townscape. "Pattern books" once provided building designs that were modified and adapted by local builders to conform to unwritten, but visibly understood, community design standards.

Contemporary building styles, often reflecting modern systems of mass production, mass marketing, and easy product identification, break dramatically from local styles, resulting in a bland homogeneity that can destroy community character and identity. Developers however — particularly at the coercion of municipalities — are becoming more sensitive to local design issues. Even national chains, including "big box" retailers and convenience stores, are willing to alter standard building designs to better fit local character, in order to secure a profitable trade area.

Perhaps the greatest challenge on this front is convincing public agencies and institutions — which are often exempt from local regulations — that the location and design of public buildings, such as post offices and schools, are critical to the function and character of a community.

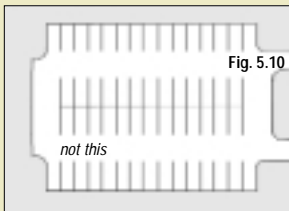
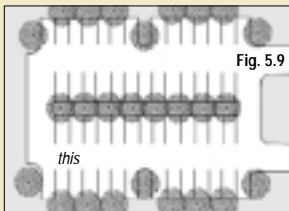
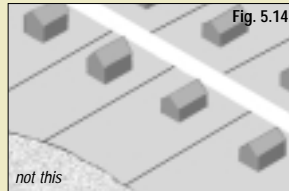
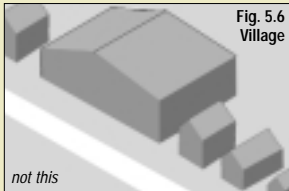
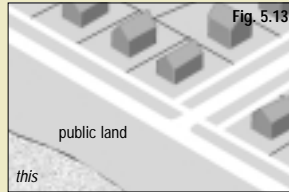
### Practices

In urban areas, villages and growth centers, maintain or establish a pedestrian streetscape, defined by consistent building spacing, setbacks and facades, street trees, sidewalks or paths, appropriately scaled signs and lighting, and street furniture.

- Orient building facades and entrances to the street, and not to parking areas — where necessary, provide double entrances. (Fig. 5.1-5.2)
- Break up larger buildings to maintain a visually compatible, pedestrian scale of development. (Fig. 5.3-5.6)
- Maintain a pedestrian scale and orientation at street level (e.g., storefronts, display windows, canopies, signs) — avoid large blank walls. (Fig. 5.7-5.8)
- Screen and landscape parking areas — separate parking aisles with tree strips, walkways. (Fig. 5.9)
- Recess or site garages to the side or rear of new housing — garages should not dominate or extend beyond the building facade. (Fig. 5.11-5.12)
- Maintain shared or public access (visual and/or physical) to natural amenities.
- Design new buildings in downtowns and village centers to complement historic structures surrounding the site.
- Site and design chains or franchises (e.g., gas stations, fast food establishments) to fit in with traditional building design and architecture.

- Site parking under, to the rear or side of buildings (e.g., center of the block) rather than to the front.
- Incorporate well-designed and landscaped green space (e.g., central green, pocket parks, tree belts) to serve higher density development. (Fig. 5.13-5.14)
- Preserve visual access to adjoining open space and prominent cultural features — through the spacing of buildings, the siting of open areas, and the incorporation of viewsheds (e.g., terminal vistas at intersections) in site design and layout. (Fig. 5.13-5.14)





## Project Examples

### Urban & Village Centers

The following projects illustrate how new development can fit into a traditional pattern, maintaining a human scale and pedestrian orientation.



#### News Bank, Chester, VT

This fast-growing, high-tech information company employs 200 people on Chester's main street. Despite its large size, News Bank maintains a scale and pattern of development that is compatible with the character of the village, and comfortable for pedestrians. The company achieves this by using several smaller buildings rather than one large facility. Its buildings adhere to the traditional setback of Main Street, and have been expanded to the rear. Service functions — loading and unloading of goods, as well as parking — occur in the rear.



#### Post Office, Huntington, VT

Despite the constraints of a challenging site, this postal facility meets the needs of modern postal operations while maintaining a compact form and scale in the center of Huntington. A historic village building was restored and expanded to accommodate the USPS as well as other businesses. The entrance faces the street, not the parking lot.



#### Fire Station, Bennington, VT

By necessity, the facade of this building is made up of garage doors but its design avoids the monotony and awkward scale typical of many fire and rescue buildings. Multiple stories and high quality materials give the building a more substantial presence on the street while multiple doors break the scale of the garage opening into more human proportions.



#### Stewart's Shop and gas station, Manchester Center, VT

This new franchise convenience store was constructed close to the street, and a sidewalk was built in front of it. Unlike many gas stations, it has no canopy over the pumps. Parking and gas pumping take place on the side of the lot, not the front, and signs are small. The building's windows help maintain a pedestrian scale along the street



#### Pitcher Inn, Warren, VT

This is a relatively large structure in a small village but it doesn't appear oversized because the building is articulated with eaves, porches, and gables. Several entrances and many windows along the street help animate the facade, giving it a pedestrian-friendly character.



#### Palisades Street, Stowe, VT

This small residential development was recently added onto to the existing village street grid. The narrow lots and consistent setbacks of this street create a strong building edge, similar to the traditional pattern of Stowe village. Shared garages are set in the rear of the lot, not in the front. Landscaping reinforces the public orientation of the streetscape.



#### Carriage house apartments, Boulder, CO

This building is part of a larger residential infill project in an urban neighborhood. This mid-block accessory unit provides parking on the ground floor and apartments upstairs. The garage doors that line the facade are recessed and broken into smaller units, minimizing their negative visual impact.

## PROTECT ENVIRONMENTAL QUALITY...

by incorporating green infrastructure, preserving natural areas, and creating attractive, pleasant communities.

**O**pen land is commonly perceived as “vacant” land ripe for development. Natural site features — topography and drainage, wetlands and streams, woodlands and wildlife habitat — are often viewed as obstructions to be filled, channeled, cleared and bulldozed to pave way for new development. At best, select features are retained as natural “amenities” intended to add market value to a project. Growing smarter means growing greener by:

### Developing Brown rather than Green Fields

Green fields, in the short term, are comparatively cheap and easy to develop. In the long run extending and maintaining infrastructure, roads, services and other improvements into undeveloped areas can result in considerable ongoing expense and more wide spread environmental degradation. Growing smarter means developing vacant or abandoned areas served by infrastructure that are already disturbed — through infill or “brownfield” (contaminated site) development — before extending development, infrastructure and services into undeveloped areas of the community.

### Incorporating Green Infrastructure

There is growing awareness that the natural functions of “green infrastructure” — e.g., natural topography and drainage, floodways, wetlands, and existing vegetation — are as fundamental to site design as the “gray infrastructure” of roads, parking lots, water, sewer and utility lines. Incorporating natural features up front in site planning and project design can save time and money — many features serve valuable engineering functions that minimize flooding, surface runoff and soil erosion and enhance water quality. This does not preclude higher development densities. In central business districts and growth centers, where the highest densities are desired, off-site mitigation and/or the provision of gray infrastructure also may be required. Vegetative screening, building orientation and design, can also substantially increase energy efficiency, thereby reducing energy costs and associated environmental impacts.

### Protecting Water Quality

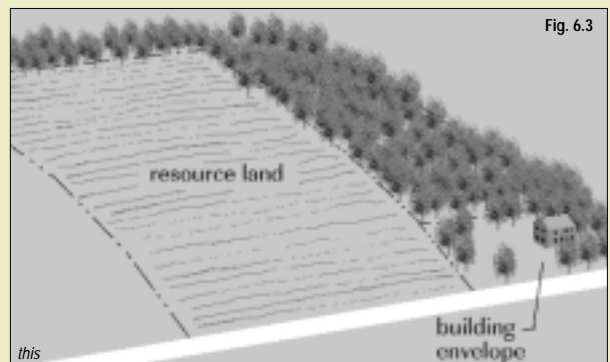
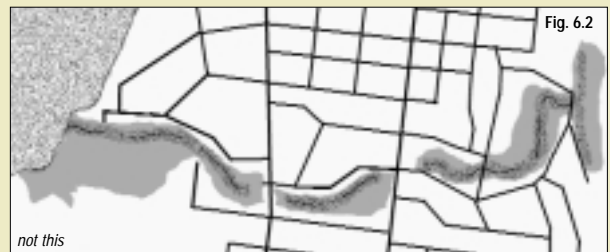
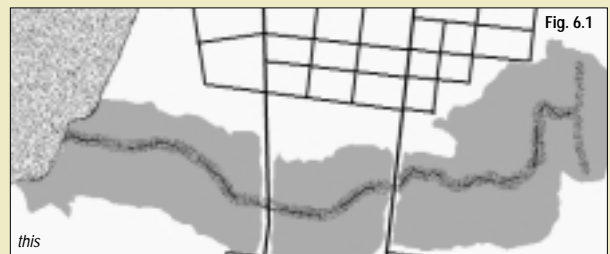
Shorelands, rivers, and wetlands are dynamic systems that change over time. Buffering these systems from development not only protects valuable natural functions — including stormwater conveyance, flood control and groundwater recharge — it also protects adjoining properties by reducing environmental risk and the need for more expensive control measures. Buffered areas serve a variety of functions — including water storage, filtration, erosion and temperature regulation — that protect water quality and aquatic habitat. Linked, they can also serve as wildlife and recreational corridors.

### Preserving Biodiversity

The definition of “critical wildlife habitat” is expanding — to include not only localized rare plant and animal species (as required under the Endangered Species Act), but also larger upland core or interior habitats, edge habitat, and connecting travel corridors. Sprawling development — including poorly sited roads and utility lines — often results in habitat fragmentation and loss, and the interruption of major wildlife travel corridors. It also limits access to land for hunting and fishing, and other wildlife-related recreational pursuits that contribute significantly to the state’s economy. Development can be sited to avoid major habitat areas, and be designed to incorporate edge habitat and linking corridors.

### Integrating Greenways

Many communities are defining greenway networks that may include recreational, riparian, wildlife, and utility corridors, and “green belts” that edge and visually define settlement. Greenways link urban and village centers to local parks, open space areas and the surrounding countryside. They also provide a framework for development, just as road networks do. Incorporating greenways in site design offers on-site access to off-site amenities and recreational opportunities.





## Practices

- Redevelop sites that have already been disturbed (e.g., brownfields, vacant shopping centers).
- Incorporate “green infrastructure,” including natural features, drainage patterns and other functional open space (e.g., landscaped areas) in site design.
- Avoid building in floodplains — limit these areas of the site to open space uses (e.g., agriculture, forestry, outdoor recreation).
- Incorporate to the extent feasible existing contours and vegetation in site design to minimize the amount of grading and clearing required.
- Maximize density in areas served by wastewater and stormwater collection and treatment systems.
- Incorporate energy efficient site layout and building design.
- Incorporate nonstructural and/or structural best management practices (BMPs) for stormwater management and erosion control in site planning and development.
- Minimize the need for fertilizers and pesticides — avoid large lawn areas and use native species in landscaping.
- Outside of urban, village or other designated growth centers, define development and building envelopes to exclude environmentally sensitive areas (e.g., steep slope, head-water, aquifer recharge, wetland and critical habitat areas).
- Maintain or establish undisturbed, vegetated buffers of sufficient width to protect water quality and wildlife habitat along rivers and streams, and around ponds and wetland areas. (Fig. 6.1-6.2)
- Locate development and associated building envelopes, road and utility corridors to avoid the fragmentation of wildlife habitat, including core habitat areas and connecting travel corridors. (Fig. 6.3)

## Project Examples

### Downtowns & Villages

The following examples show how developers can help protect the environment by locating projects in existing centers and using energy efficient and alternative building materials and techniques.



#### Infill building, Hardwick, VT

This building filled a hole left by a fire in downtown Hardwick. Like many of the examples shown in the “Concentrate Development” section, this development project saves land by recycling a site that had already been disturbed. In locating homes and businesses centrally, it uses the transportation system more efficiently, saving energy. It also saves energy with its green design. Double exterior walls, highly insulated ceilings and windows, a fresh air circulation system with heat recovery, and the use of non-toxic materials combine to minimize the resources needed to operate and maintain the building.



TRIXIE CHILDS & PARTNERS

#### Oakes Hall, Vermont Law School, South Royalton, VT

Vermont Law School’s goals for this new classroom building were durability, efficient use of resources, and adaptability to future needs. They achieved these through a design that used durable materials, innovative heating, cooling and lighting techniques, and composting toilets. This structure consumes significantly less fuel oil (59%), electricity (27%) and water than a similarly sized conventional building. Recycled and environmentally friendly materials were used throughout the building. It is located in an existing settlement.

### Countryside

In the countryside, careful siting and management practices help protect water quality, biodiversity, and wildlife habitat.



#### Mad River Greenway, Waitsfield, VT

This farm, through a partnership between the farmer, a local path association, and a watershed conservation group, helped protect the water quality of the Mad River through the establishment of a greenway along its edge. A vegetated zone between farm fields and the riverbank prevents farm runoff from entering the Mad River. This linear open space also provides habitat for wildlife and a natural recreation area for local residents.



#### Mad River Glen Ski Area, Fayston, VT

As it renovates its facilities and maintains its trail system, this cooperative ski area carefully balances the needs of skiers with those of the Stark Mountain ecosystem. As it provides recreation, the cooperative strives to maintain a healthy forest, manage the wildlife habitat, monitor the watershed, and minimize the environmental impact of the ski area operations. Trails are narrow and follow the natural contours of the mountain. When trees are felled by storms, Mad River Glen follows a sustainable forest management plan to guide restoration efforts, including the planting of trees and the prevention of skiing in regeneration zones.



JEFFREY P. ROBERTS

#### Essex County Forest Land

A 3,598-acre tract of forestland in the Northeast Kingdom has been set aside for timber harvest, wildlife habitat and recreation. The Vermont Land Trust purchased the land then resold the bulk of it to a timber investment and forest management company. The two groups worked together to identify significant natural areas and draft easements to protect the integrity of these areas while allowing timber to be harvested. 81 acres of the newly assembled parcel include fragile land within the Nulhegan River basin that will not be logged but sold to the Nature Conservancy

### III. Best Development Processes: Making Smart Growth Work

To grow smarter, the social, economic and political obstacles to smart growth need to be identified and those within our control minimized. Several organizations, including the Vermont Forum on Sprawl, have documented that many of the barriers to smart growth involve the way in which our communities plan for their future and regulate development. The processes we put in place for citizens to decide upon a common community vision, and the rules and regulations we enact to achieve that vision, can either help or hinder smart growth.

#### Better Planning, Fewer Barriers

In a study of eight sample communities to determine local causes of sprawl, the Vermont Forum on Sprawl identified a pattern of inconsistency between town plans and associated land use regulations. The town plan, by statute, provides the framework for local zoning and other regulations, and should establish a clear vision for community growth. This is not always the case, however, for a variety of reasons.

Too often, citizens don't participate in the process of developing a plan for their community. Planning commissions need to reach out to local residents and landowners and provide meaningful opportunities to participate. The link between the plan and policy — including development regulations — must be clear so that those who exercise their right to participate in the regulatory process have exercised their responsibility to participate in the planning process.

Much has been written on tools and techniques for involving citizens in the planning process. The more focused that process is with regard to where and how the community should grow, the stronger will be the link to development regulations. In addition to common — and still very useful — public participation tools such as community surveys, neighborhood meetings, focus groups and pot-luck suppers, other tools that take advantage of modern technologies and focus on design and development can strengthen the link between planning and smart growth. These include:

**Design workshops**, or charrettes, which can help citizens to understand how the individual choices of landowners and developers can contribute to — or detract from — a vibrant, healthy community while helping to establish a vision for a neighborhood or community.

**Visual preference surveys**, which allow citizens and landowners to view images of various land uses and development patterns and rank those images in order of preference.

**Visualization techniques**, used during the planning process, also can better educate the public regarding the implications and benefits of smart growth principles.

Conducting **build-out studies** to predict future development of a community or area based upon physical constraints, market trends and existing regulations, can shed a great deal of light on the long term outcome of keeping, or revising, current development regulations.

The preparation of **neighborhood or growth center plans** describe in detail the community's long term growth objectives, including the desired type, pattern and density of development, and strategies for providing infrastructure and services to support that growth.

Through these, and other, planning techniques — which are being used with greater frequency in Vermont — community planning can become more relevant for citizens and planners, and can strengthen the link between planning for the future and actually building the future.

#### The Hidden Design in Land Use Regulations

Zoning bylaws and other development regulations often discourage, or prohibit, many Best Development Practices. Oversized lot size requirements in village centers and rural areas, large setbacks, rigid segregation of uses, excessive parking requirements, and vague review criteria are common examples of how regulations discourage smart growth.

Among the most important strategies for eliminating regulatory barriers to smart growth is to evaluate your community's regulations to understand the type and pattern of development being fostered. Do the regulations allow for concentrated development? A mix of uses? Is development permitted that will discourage transportation options or lead to scattered, sprawling development in rural areas far from town centers? A hard look at many current regulations reveals that rules intended to protect the community actually undermine its character and promote sprawl. Revising standards to encourage — or require — the use of Best Development Practices is a critical smart growth strategy.

For guidance on how smart growth practices can be translated into regulatory standards; and for examples of smart growth development regulations, the Vermont Forum on Sprawl and the Conservation Law Foundation are preparing *Better Bylaws, Better Communities*, a guidebook on smart growth regulations.

#### Putting Best Development Practices to Work

In addition to better standards, the administrative processes used to apply standards can also encourage or discourage the use of Best Development Practices. Just as there are "best development practices" for smart growth, it is useful to think of "best development processes." Fair and efficient review processes, and incentives to reward good development, should be key features of local regulations which promote smart growth.

Local regulations are the vehicle for bringing the community, as represented by the local review board, the developer, and interested citizens and neighbors together to consider a proposed development. Each of these participants comes to the table with specific rights and responsibilities spelled out in local regulations and state statutes. Each of the parties can help make the local process fair and efficient, and each can undermine that fairness and efficiency by their respective actions.

## Best Development Processes

Many of the procedures used in local development and land use regulation are prescribed by statute. Within this framework, there are a number of options available to communities to streamline regulatory processes and encourage smart growth. Below are several relatively simple options for making local regulatory processes more predictable for all participants, many of which can also facilitate smart growth through incentives for projects that incorporate Best Development Practices into the project design.

In addition to the options briefly described below, the Vermont Forum on Sprawl has prepared a supplement to this report entitled *Best Development Processes: Making Smart Growth Work*, which provides greater detail regarding the different options.

**Establish a Development Review Board** to place all municipal regulatory authority traditionally shared between the planning commission and board of adjustment into the hands of a single review body.

**Eliminate redundant or overlapping review processes.** Its not uncommon in Vermont for many development projects to be subject to two or more different local review processes (e.g., subdivision, site plan, conditional use and design review). Where no development review board has been established, this typically requires that both the board of adjustment and planning commission review a single development. By better coordinating review processes, and eliminating duplication, applicants can save time and avoid the potential for receiving contradictory decisions from boards that don't see eye to eye.

**Empower staff** to serve as the preliminary, or only, review body in certain situations. With clear standards, room for discretion and subjectivity can be minimized, allowing greater administrative review authority. Communities without staff can benefit from project review checklists. Such checklists, which typically include the list of application requirements as well as a list of specific review standards, can guide the process and help document a project's compliance with local smart growth standards with a minimum of discretion.

**Define "smart growth" as a permitted use.** For example, a proposed land use (e.g., multi-family dwellings, mixed commercial) could be categorized as a "permitted use" if it incorporates best development practices — as determined through locally devised criteria — and would be issued a permit by the zoning administrator with little or no board review. Similar development that did not incorporate best development practices would be classified as a conditional use subject to board review according to conditional use (and, perhaps, smart growth) criteria.

**Make better use of Planned Unit and Planned Residential Developments (PUDs & PRDs)** that provide greater flexibility of design in accordance with smart growth standards in appropriate zoning districts. In effect, PRDs and PUDs allow review boards to set aside inappropriate zoning standards to achieve a better project design than would otherwise be possible. By adopting Best Development Practices as guidelines — or PUD and/or PRD development standards — communities can offer developers a smart growth alternative to the strict application of standards related to lot sizes, building dimensions and land use.

## Provide density bonuses for smart growth projects.

Vermont statute specifically authorizes local review boards to grant density bonuses to Planned Residential Developments (PRDs) and Planned Unit Developments (PUDs) for a variety of purposes, including the provision of affordable housing, good site design or the protection of open space. Communities may allow higher densities for mixed use and/or multi-story development in downtowns and villages. Higher densities for the adaptive re-use of historic structures (e.g. old mills), or in exchange for the provision of specific "smart-growth features" (e.g. mix of uses, design elements, provision of public space or transportation options), may also be allowed under creative zoning bylaws.

**Incorporate Best Development Practices into permit allocation programs** to give higher priority to smart growth projects under zoning permit or wastewater capacity allocation systems. Many communities struggle with the demands of rapid growth by regulating the rate of development. Often, permit or wastewater capacity allocation formulas regulate the timing of development without addressing broader land use concerns. By tying allocation and phasing programs to smart growth principles, and rewarding projects that incorporate Best Development Practices, the community can strengthen its land use policies while accommodating a predictable growth rate.

**Require early notification of neighboring landowners** for pending applications, and encourage applicants to meet with them to identify concerns prior to the formal hearing process. It should be noted, however, that pre-hearing negotiations can place applicants at risk should neighbors not be informed of the standards that will be applied to the project. Notification of neighboring landowners should therefore include a description of the proposed development and a description of the standards and criteria that will be applied to the proposal.

## Run public hearings effectively, efficiently and fairly.

Prepare and adopt rules of procedure to guide local reviews, and to explain that process to applicants and other interested participants. Board members should periodically evaluate their processes — how meetings are conducted, whether deliberations are fair and efficient — and make adjustments as needed.

**Publish design guidelines** or local best development practices to document and illustrate how smart growth principles apply within your community; and to advise applicants and interested parties (e.g. neighbors, citizen groups). By graphically articulating desired development standards, the community will send a clear message regarding desired types and patterns of development, and developers can respond with clear documentation that a project is designed to meet local standards.

**Commit to an ongoing training program** for local board members and staff. Serving on a local review board can be thankless and time consuming. Taking on the responsibility involves more than going to meetings, as it involves a responsibility to make informed decisions in a fair and consistent — and legal — manner.

# RULES OF CONDUCT FOR A BETTER PROCESS

We can all support better review processes by abiding by basic “rules of conduct” — formal rules which are required by statute, and other more voluntary rules which govern how we participate in the process.

## Local review boards and municipal officials can:

- Make sure all participants in regulatory proceedings are aware of the procedures and standards used to evaluate proposals — it’s important that concerned neighbors understand when, and to what extent their concerns can or cannot be addressed through local regulations.
- Limit the review of projects to information relevant to the standards and criteria that are in place.
- Conduct public hearings as efficiently as possible — unnecessary delay in reaching a decision is not a legitimate or effective growth management tool.
- Be prepared — do your homework and understand your regulations.
- Understand the big picture — local regulations are intended implement the municipal plan. Understanding the plan — its vision, policies and objectives — will help in the interpretation and application of your regulations.
- Advocate for smart growth in your community.

## Landowners and developers can:

- Understand that the review process requires adequate time for staff review, public notices, hearings and fair deliberations by volunteer boards — and your project is not the only one under consideration.
- Be forthcoming with adequate information — the review process may not start until you have submitted a complete application; respond promptly to requests for clarifications or additional information or delays in the permitting process will likely result.
- Recognize that poorly conceived development will diminish the quality of life of a neighborhood or community — design projects according to smart growth principles and practices that contribute to the fabric of the community.
- Participate in the local planning process, not just the regulatory process.
- Provide opportunities for neighborhood involvement in project design—e.g., through a neighborhood charrette process.
- Advocate for, and build, smart growth projects.

## Citizens can:

- Participate in development of municipal plans and regulations — address up front how your neighborhood will be developed before an application is filed.
- Offer constructive solutions to legitimate concerns. Like it or not, developers have the right to use their property in accordance with local and state regulations — simply leaving a particular property undeveloped may not be a reasonable option, for the developer or the community.
- Recognize that the entire community is your backyard — identify how your concerns relate to the needs of the larger community.
- Take advantage of opportunities to address issues outside of the hearing process — by meeting with the developer and keeping an open mind, you may find an easy solution to a concern before sides become entrenched. At a minimum, you will have a better understanding of the proposed development.
- Understand that the review board has specific criteria to use when reviewing projects, and that those criteria may not allow them to address all your concerns.
- Advocate for smart growth in your community. Be supportive of projects that follow Best Development Practices.

# GLOSSARY OF VERMONT REGULATORY TERMS

**T**he authority of Vermont communities to plan for their future and regulate land use and development is established in state statute. The Vermont Planning and Development Act [24 V.S.A., Chapter 117] sets forth many of the processes and mechanisms that are commonly used to regulate development. The most common of these include conditional use review, site plan review, design review, subdivision review and Planned Unit Developments (PUD) and Planned Residential Developments (PRD) review.

Depending upon the process, one of three review boards (Planning Commission, Development Review Board, Board of Adjustment) will be responsible for reviewing applications for development to determine whether the proposal complies with standards and criteria included in local regulations. Where Development Review Boards have been created, that body (which replaces the Board of Adjustment) is responsible for all regulatory functions in the community. Without a Development Review Board, regulatory functions are shared by Planning Commission and Board of Adjustment. Planning Commissions also fulfill many planning functions, including drafting town plans and new and revised bylaws. The Board of Adjustment (or Development Review Board) also considers appeals of decisions made by the Administrative Officer.

## The following describes some common terms associated with local regulations.

**Administrative Officer (Zoning Administrator):** The Administrative Officer, appointed by the Planning Commission with approval of the Legislative Body [§4442], is responsible for literally administering and strictly enforcing the provisions of zoning bylaws. This involves issuing zoning permits, inspecting developments, maintaining records, and performing other associated tasks as is necessary and appropriate.

**Bylaws:** Zoning regulations, subdivision regulations or an official map adopted in accordance with the Vermont Planning and Development Act.

**Conditional Use:** A use permitted in a particular zoning district only upon a finding by the Zoning Board of Adjustment or Development Review Board that such use in a specified location will comply with the conditions and standards set forth in the bylaws. Such conditions and standards must include standards set forth in §4407 (2). Such approval may only occur after the conclusion of a warned public hearing, and may be appealed by an Interested Person to the Vermont Environmental Court.

**Design Review:** A process in which development within a particular zoning district, designated to encompass an area containing structures of historical, architectural or cultural merit, is subject to review by the Planning Commission or Development Review Board, and may be subject to review by a Design Review Board acting in an advisory capacity. Design review may address a wide range of architectural and site design details, depending upon the design issues and associated design criteria adopted by the municipality. Typically, design review processes are adopted in accordance with statute which authorizes Design Control Districts [§4407(6)] of Historic Districts [§4407(15)].

**Interested Person:** As defined in statute [§4464(b)], interested persons, who have the right to participate in local regulatory processes and to appeal decisions of the Administrative Officer and local review bodies, includes the following:

- The municipality or an adjoining municipality;
- A person owning or occupying property in the immediate neighborhood of a property which is the subject of a decision or act taken under these regulations, who alleges that the decision or act, if confirmed, will not be in accord with the policies, purposes or terms of the plan or regulations of the Town;
- Any ten (10) persons owning real property within the Town who, by signed petition, allege that any relief requested by a person under this section, if granted, will not be in compliance with the plan or regulations of the Town;
- Any department or administrative subdivision of the State owning property or any interest therein within the Town or adjoining municipality, and the Vermont Agency of Commerce and Community Development; and
- The local Conservation Commission, if one exists.

**Overlay District:** A zoning district that encompasses one or more underlying district and that imposes additional requirements or standards than otherwise required by the underlying district(s).

**Permitted Use:** A use permitted in a particular zoning district, typically upon the issuance of a zoning permit by the Administrative Officer. Permitted uses generally do not require review and approval of local review boards (e.g. Planning Commission, Development Review Board, Board of Adjustment) providing they meet dimensional and density standards for the district within which they are located. Permits for permitted uses are subject to appeal by Interested Persons to the Board of Adjustment or Development Review Board within 15 days of issuance.

**Planned Residential Development (PRD):** An area of land, controlled by a landowner, to be developed as a single entity for a number dwelling units; the plan for which does not correspond in lot size, bulk, or type of dwelling, density, lot coverage, and/or required opens space under local bylaws these regulations except as a PRD (see also Planned Unit Development).

**Planned Unit Development (PUD):** An area of land, controlled by a landowner, to be developed as a single entity for a number of dwelling units and commercial and industrial uses, if any; the plan for which does not correspond in lot size, bulk, or type of dwelling, commercial or industrial use, density, lot coverage, and required opens space under local bylaws except as a planned unit development.

**Site Plan Review:** A review process that may be required for any use other than a 1 or 2 family dwelling. Site plan review is administered by the Planning Commission or Development Review Board, if such a Board has been established. Historically, site plan review standards were limited to circulation and parking, traffic access, landscaping and screening, and protection of renewable energy resources. Statute [§4407(50)] was changed in 1993 to allow the regulation of “other matters specified in the bylaws.” Many communities do not require a warned public hearing for site plan review, for which a decision must be issued within 60 days of the submission of the application. Decisions may be appealed by an Interested Person to the Vermont Environmental Court.

## 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. \$10.00

**Education partner:** The Orton Institute

**Available in:** now.

##### No. 3: *Better Bylaws, Better Communities*, a guidebook on smart-growth regulations.

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.

**Project partner:** The Conservation Law Foundation.

**Education partner:** The Orton Institute

**Available in:** May, 2001.

##### No. 4: *How to Determine Your Town's Infill Potential*.

This report describes how to find and identify the room for growth in your town center (or centers). Often, communities are unaware of the places where they could expand without sprawl — such as, for example, by filling in vacant land and parking lots, renovating empty buildings, or increasing the number of floors in buildings.

**Project partner:** The University of Vermont Historic Preservation Program.

**Available in:** summer, 2001.

##### No. 5: *New Models for Compact Commercial and Industrial Development*

Designed to counter today's trends toward strip commercial development and spread-out, isolated industrial lots, these new models reflect smart-growth principles and reinforce Vermont's state policy of compact settlements surrounded by rural countryside.

The models are developed for four settings:

- urban and village centers
- older, vacant and/or underused industrial areas near downtowns and village centers
- new growth centers
- older, vacant and underused industrial areas.

**Project partner:** The Vermont Business Roundtable.

**Available in:** 2001.

# BACKGROUND ON VERMONT FORUM ON SPRAWL

## Mission, Objectives, and Work Plan

The Vermont Forum on Sprawl (VFOS), a 501(c)(3) non profit organization, was founded in 1998 in response to a growing need to address the issue of sprawl in Vermont. Despite well-recognized and successful programs, including Act 250 and the Housing and Conservation Trust Fund, Vermont is now experiencing the destructive patterns of growth that other parts of the country have faced for years. Seeing the need for more information on sprawl, and its causes and effects, and for strategies to combat sprawl, the Vermont Forum on Sprawl was formed to fill a major void.

The mission of the Vermont Forum on Sprawl is: to preserve Vermont's unique working landscape and quality of life while encouraging economic vitality in community centers.

We accomplish our mission through: 1) research and communications, 2) public policy development, 3) community tools and demonstration projects, and 4) building partnerships.

Our program objectives are to:

- Provide information on the causes and effects of sprawl that inform strategies to arrest this form of development;
- Communicate about sprawl and its consequences in a clear and understandable way;
- Share information and build coalitions with government, business, conservation and community organizations on the strategies to address sprawl and achieve smart growth.
- Involve a broad cross-section of Vermonters and experts in the development of solutions to counter sprawl;
- Learn from other places and from demonstrations and testing in Vermont about what solutions are effective

In three years, the Vermont Forum on Sprawl has increased public awareness on sprawl, advanced state policy, and developed partnerships to tackle specific issues. We have established ourselves as a resource on sprawl and smart growth for local, state, and national public policy makers, other non-profits, the business community, the media and citizens.

## Staff

Beth Humstone, Executive Director/ President  
Sarah Judd, Associate Director  
Nancy Morin, Office Manager

## Board of Directors

John Ewing, Board Chair.  
William J. Basa, President, Global Market Research  
Darby Bradley, President, Vermont Land Trust  
Paul Bruhn, Executive Director, Preservation Trust of Vermont  
Delia Clark, Co-Director, Antioch New England Institute  
Wayne Granquist, Senior Advisor, Manchester Capital Investment  
Robert Klein, Director, The Nature Conservancy of Vermont  
Charles Kireker, Partner, Green Mountain Capital  
John Marshall, Esq., Member of the firm, Downs, Rachlin & Martin  
Nancy Nye, Community Development Consultant  
William C. Shouldice, IV, President and CEO, The Orton Family Foundation  
Thomas Slayton, Editor, Vermont Life Magazine  
Helen Whyte, Northeast Regional Program Director, The Orton Family Foundation.



110 Main Street, Burlington, VT 05401

*Tel:* 802 864-6310

*Fax:* 802 862-4487

*E-mail:* [info@vtspawl.org](mailto:info@vtspawl.org)

*Web site:* [www.vtspawl.org](http://www.vtspawl.org)