

PLANNING PRINCIPLES

SIZE

The term ‘compact’ is a frequently used adjective in planning literature, but what does it mean for municipalities in Vermont that are planning growth centers? Measures of compactness are often based on the scale of places that are pedestrian-friendly and walkable. While there is no one-size-fits-all measurement for a compact settlement, there are some general guidelines to consider.

The historic core of many of Vermont’s downtowns and village centers would fit into a 40-acre area. A 160-acre area (a square with ½ mile sides) often can encompass most of the historic residential neighborhoods as well as the downtown commercial core of a traditional center as illustrated in Figures 11 and 12 below.

The average person can walk a ¼ mile at a comfortable pace in about 5 minutes; this is the distance within which a significant percentage of people will leave their cars parked and walk between destinations. How far people will walk is dependent on more than distance however, and measures of a ‘walkable’ distance typically range between ¼ and ½ mile.

A circle with a radius of ¼ mile has an area of approximately 125 acres, while a circle with a ½-mile radius

will enclose a 500-acre area. Drawing circles of varying radii on a base map from one or more focal points (i.e. a major intersection, village green, town hall or school) is a good test for compactness and walkability. Most of Vermont’s historic settlement areas will be contained within an area close to the general standard of being walkable from the center, as shown in Figure 10 below.

Figure 10. Winooski, 1869



Figure 11. Woodstock

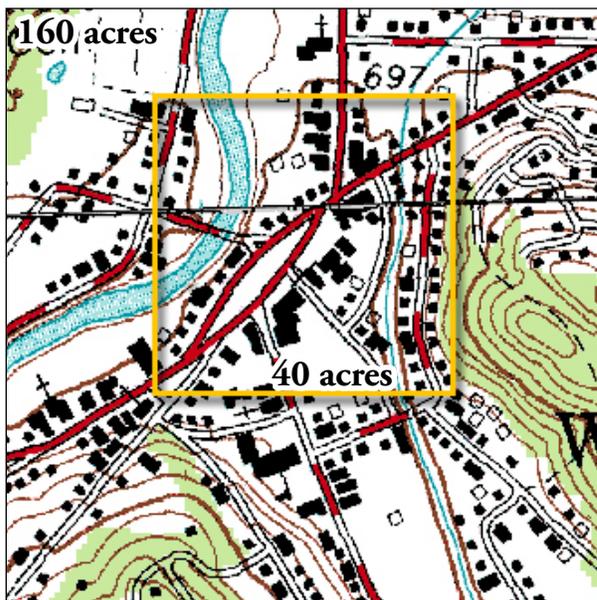


Figure 12. Morrisville

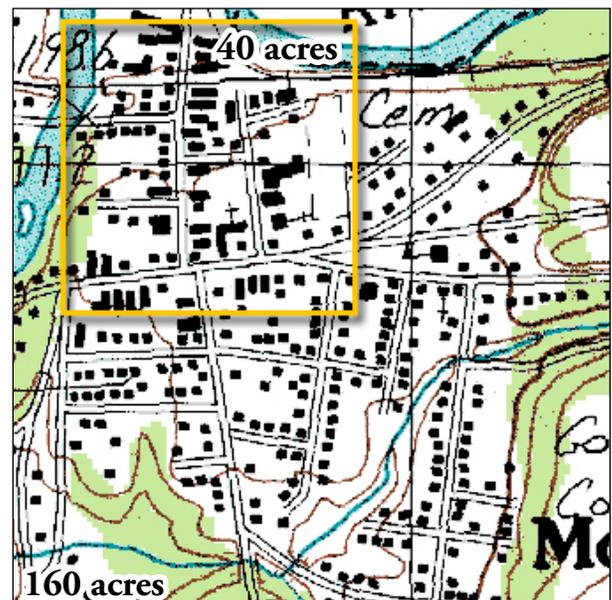


Figure 13. Neighborhoods around Downtown Middlebury

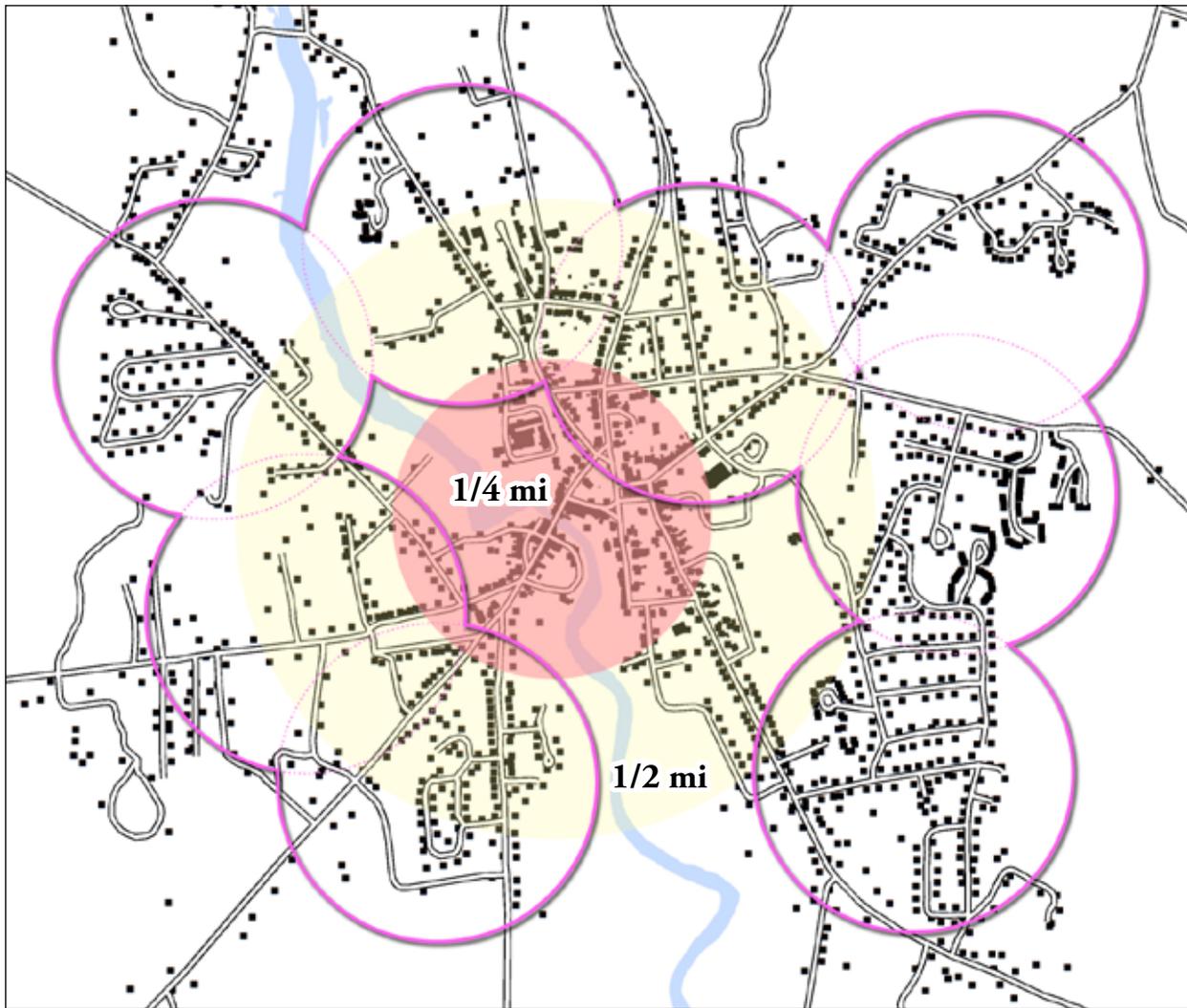


Figure 14. Area Reference Table

| | | | | |
|----------|-------------------------|--------|----|----------|
| 40 ac = | square with sides of | 1/4 mi | or | 1,320 ft |
| 160 ac = | square with sides of | 1/2 mi | or | 2,640 ft |
| 360 ac = | square with sides of | 3/4 mi | or | 3,960 ft |
| 640 ac = | square with sides of | 1 mi | or | 5,280 ft |
| 125 ac = | circle with a radius of | 1/4 mi | or | 1,320 ft |
| 225 ac = | circle with a radius of | 1/3 mi | or | 1,760 ft |
| 500 ac = | circle with a radius of | 1/2 mi | or | 2,640 ft |

One model for a growth center would be a downtown core (designated downtown, village center or new town center) with multiple walkable neighborhoods as shown in Figure 13, a diagram of the neighborhoods around Middlebury, above. This type of analysis could be used by applicants to demonstrate that a proposed growth center is compact.

DENSITY

High-density development has come to have a negative connotation in the minds of many Vermonters, conjuring up images of decaying inner city neighborhoods, cookie-cutter suburban subdivisions, or congested commercial sprawl.

But in almost every Vermont municipality, there are historic settlement areas characterized by high-density development. These places were built before five miles became a ten-minute car trip, so they had to be compact. Buildings were close to the road because there was no way to keep a quarter-mile driveway open in the winter. The tallest buildings usually stopped at four or five stories when getting to the top floor meant climbing the stairs.

The result of these development patterns has often been described as the traditional New England village or town center and is now recognized as a model for community design. Vermont's existing historic centers are a good starting point for establishing appropriate densities within proposed growth centers.

When planning for a growth center, it may be useful to separate the amount of land needed for residential and non-residential uses even though mixed-use development may be encouraged in many areas.

Residential Uses

Determining the land area needed to house a given population is a basic planning exercise. *Estimating Land Area Needs for Growth Centers* provides a methodology for preparing those calculations. Recommendations on the percentage of land area within a growth center that should be dedicated to residential use range between 50 to 80 percent. An analysis of some typical Vermont centers in *Estimating Land Area Needs for Growth Centers* found that 65 to 85 percent of their land area was used for residential purposes.

As the table in Figure 15 below indicates, the majority of the 20-year population increase of even the fastest growing Vermont municipalities can be accommodated in hundreds, as opposed to thousands, of acres if residential densities are set at appropriate levels. Within a 225-acre area, 5,000 residences could be accommodated at a gross density of 22.2 units per acre providing homes for 12,500 people. If that same 250 acres was developed at a gross density of 4.4 units per acre, the result would be 1,000 new homes.

Figure 15. Gross Density in Dwelling Units per Acre

| | Residences | | | |
|-------|-------------|-------|-------|--------|
| | 500 | 1,000 | 2,500 | 5,000 |
| 40 | 12.5 | 25.0 | 62.5 | 125.0 |
| 125 | 4.0 | 8.0 | 20.0 | 40.0 |
| 160 | 3.1 | 6.3 | 15.6 | 31.3 |
| 225 | 2.2 | 4.4 | 11.1 | 22.2 |
| 360 | 1.4 | 2.8 | 6.9 | 13.9 |
| 500 | 1.0 | 2.0 | 5.0 | 10.0 |
| 640 | 0.8 | 1.6 | 3.9 | 7.8 |
| 750 | 0.7 | 1.3 | 3.3 | 6.7 |
| 1,000 | 0.5 | 1.0 | 2.5 | 5.0 |
| | 1,250 | 2,500 | 6,250 | 12,500 |
| | Population* | | | |

* Based on an average household size of 2.5 people

While 10 dwelling units per acre may seem exceedingly dense in communities that have not allowed the creation of lots smaller than a half acre (or even larger) for decades, the resulting 4,300 square feet per dwelling is close to the historic norm for many Vermont centers as shown in Figure 16 below.

Figure 16. Average Lot Size Comparison Table

| Use Type | Historic | Current |
|---------------|--------------------|--------------------|
| Single-Family | 4,800 sq. ft. | 10,000 sq. ft. |
| Multi-Family | 3,700 sq. ft./unit | 5,600 sq. ft./unit |
| Commercial | 4,570 sq. ft. | 20,000 sq. ft. |
| Industrial | 5,300 sq. ft. | 100,000 sq. ft. |

Source: *Estimating Land Area Needs for Growth Centers*, 1995

Taking the population growth anticipated, various combinations of density and land area can be explored to determine what is most appropriate for each community or within specific neighborhoods. See page 58 for a discussion of housing options available to achieve specific residential densities.

Non-Residential Uses

The density of non-residential development is often measured in terms of floor-area ratio (FAR), which is the ratio of a building's gross floor area to the area of the lot on which the building is located. Requiring higher FARs can promote compact, multi-story development over low-density, one-story structures, especially when used in combination with lot coverage and other dimensional standards. As shown in Figure 17 below, Buildings C and D have the same gross square footage, but the footprint of the two-story Building D is half that of the one-story Building C. As more stories are added, the FAR increases.

Figure 17. Floor-Area Ratio

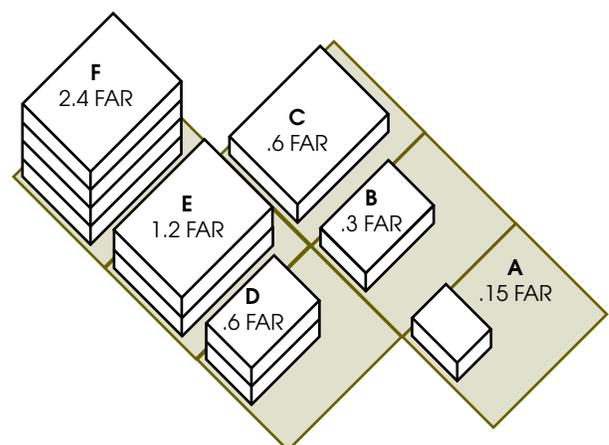


Figure 18. Mixed-Use Development Model Site Plan



New Models for Commercial and Industrial Development Site Plans, Vermont Forum on Sprawl, 2003

Lower FARs are commonly tied to large amounts of surface parking. Parking requirements can be a significant constraint on achieving higher-density non-residential development (see discussions on page 62 and 83).

MIXED USE

See Vermont Land Use Planning Implementation Manual, Planned Unit Development.

Mixed uses were common in Vermont’s downtowns and village centers a century ago when residents generally could walk a short distance from their home to shop at the general store, work at the local mill, or attend school or religious services. Within Vermont’s traditional downtowns, mixed-use buildings are common with commercial activity on the ground floor and office or residential space on the upper floors.

Conventional suburban development made the segregation of uses the accepted norm in many communities and many local zoning regulations prohibit mixed-use development. While the separation of land uses was originally intended to protect people from polluting industries and businesses, it has led to a pat-

tern of land development in which people must drive from home to work, school and stores – each often located miles away in opposite directions.

Encouraging development of a mix of uses within a growth center will provide residents with easy access to a variety of goods, services, social opportunities, schools and even recreation within walking or biking distance of their home. Ideally, employment will also be nearby, saving the time, energy and the expense of a long commute.

A mix of uses can occur within the same building, within a single development or within the same area of the growth center. The site plan shown above for a mixed-use development includes housing, office, retail, manufacturing and civic uses.

Municipalities can include “mixed use” as an allowable use in growth center zoning districts. Existing single-use areas within a growth center can be converted to mixed use over time. Neighborhood-scale commercial uses can be allowed in residential districts. Housing, especially upper-story apartments, can be permitted in commercial districts.

PUBLIC SPACES

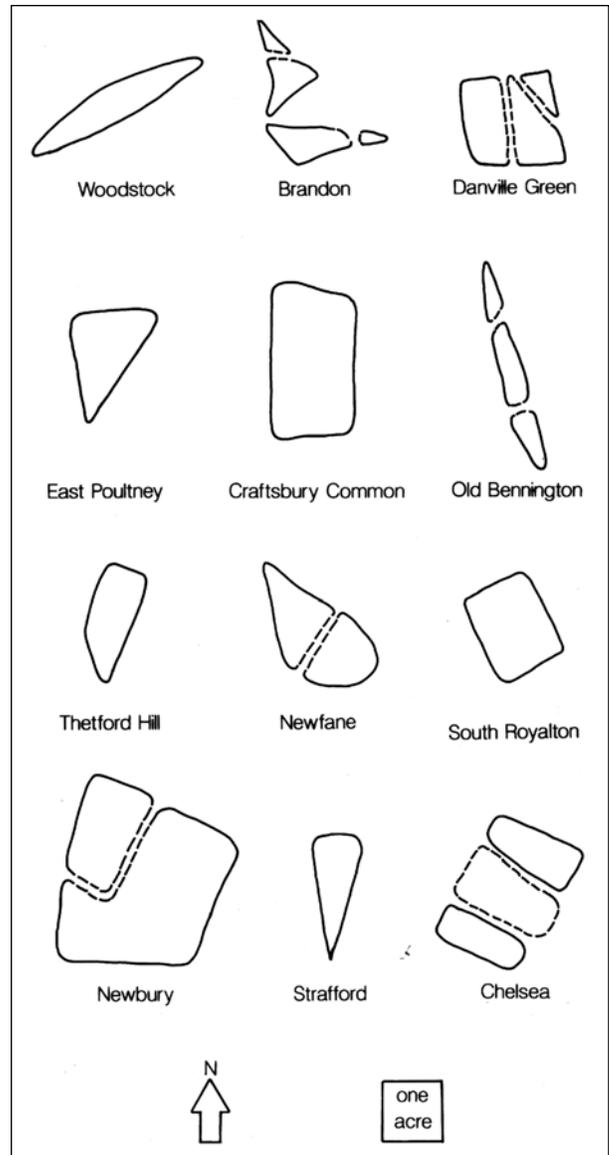
Public Open Space

Public open space, in the form of town greens and commons, is strongly associated with Vermont's traditional downtowns and village centers. Today, communities with these valuable public spaces find them to be not only attractive open space and identifying icons, but also very useful spots for community activities. They often host farmers' markets, Fourth of July celebrations and other holiday events, as well as concerts and other gatherings, that draw residents and visitors to the downtown or village center. Many of Vermont's traditional town greens are only a couple of acres in area and are irregular in shape.

Within a densely developed growth center, connections to nature can be maintained through a well-designed system of open spaces. Such a system includes: tree-lined streets, sidewalks, walkways, parks, greens, commons, playgrounds, sports fields and courts, trails, buffer zones, wildlife habitat, natural areas and scenic views.

Municipalities can incorporate guidelines or standards for provision of various types of open space into their plans and policies. These standards may be based on national recommendations, such as those from the National Recreation and Park Association (NRPA) or based on local preferences. Tools such as the official map, public works specifications, impact fees and dedication requirements can be used to implement open space goals.

Figure 19. Form and Size of Vermont Town Greens



Crossroads, Hamlet, Village, Town; Randall Arendt, 2004

Figure 20. Recreation Facility Opportunity Standards

| Facility Type | Approximate Size (acres) | Standard (acres per 1,000 pop) | Maximum Travel Time | Means of Access | Comments |
|-------------------|--------------------------|--------------------------------|---------------------|--|---|
| Play lot | 1 - 2 | 2 | 10 min. | Foot or bicycle | Combined with residential development or school |
| Pocket park | .25 - .50 | .25 | 10 min. | Foot or bicycle | For office workers, shoppers, neighborhood residents |
| Neighborhood park | 4 - 7 | 1 | 20 min. | Foot or bicycle | Should contain passive areas with landscaping, as well as active areas such as play fields, court games, tot lots, etc. |
| District park | 20 - 100 | 2 | 30 min. | Automobile, mass transit, bicycle, foot, trail | Should include comfort station, interests for all ages; 1/3 capacity for winter activities (e.g. ice skating, sledding) |

Source: Adapted from NRPA's *Park, Recreation, Open Space and Greenway Guidelines*

Civic Uses

Civic uses such as the municipal buildings, post offices, schools and libraries, which bring residents to the center of a community on a regular basis, are important elements of a successful growth center. As well as serving their primary functions, they can also provide much needed community meeting space. Running errands to the post office or municipal building is an opportunity for informal encounters with friends and acquaintances. Businesses located near these civic uses benefit from the pedestrian traffic they generate.

Schools

Many Vermont communities still have their elementary school located in a downtown or village center. These schools are generally on small lots (less than 5 acres in area) and may not have attached recreation fields. Some are historic (many schools were built in Vermont in the early 20th century), multi-story buildings that have served generations of students.

Modern school facility standards have resulted in construction of bigger, mostly single-story buildings on large lots (10 acres or more in area) with extensive recreation fields and parking areas outside the downtown or village center on open land. Children are no longer able to walk to school and must be bused or driven for classes and after-school activities.

Figure 21. Woodstock, VT Town Green



Figure 22. Tree-Lined Street in Brandon, VT



Street trees can be a critical component of a community's open space system. Trees add scale, shade and visual interest to the street and studies have shown they increase property values. Wide esplanades, like those on the street above, provide trees with adequate room to grow.

INFILL

See Vermont Land Use Planning Implementation Manual, Downtown Revitalization, Historic Preservation, and Brownfields.

The goal of infill, as the name implies, is to develop or intensify the use of vacant or underutilized parcels. Infill development can be residential, commercial or mixed use. The size and location of infill development can vary greatly but opportunities include:

- ◆ Development of vacant parcels. Close examination of parcel maps and/or aerial photos often reveals overlooked land that has development potential. If reasonable density is allowed, the development of such parcels can

lead to a significant increase in needed housing or other uses. However, parcels may not have been developed previously because of site conditions that increase building costs.

- ◆ Redevelopment of vacant or underutilized buildings and sites. The use of existing parcels that have been developed at significantly less than the allowed density can be intensified if done with attention to the context. Vacant, non-historic buildings that have less value than the property they occupy may also be candidates for redevelopment spurred by growth center designation. Non-conforming uses that have outgrown their site and conflict with their surrounding neighbors may also be candidates for infill if they can be successfully relocated to a more appropriate area.
- ◆ Rehabilitation of historic buildings. Due to state and federal support there are excellent examples of historic re-use throughout Vermont from senior housing to industrial uses.

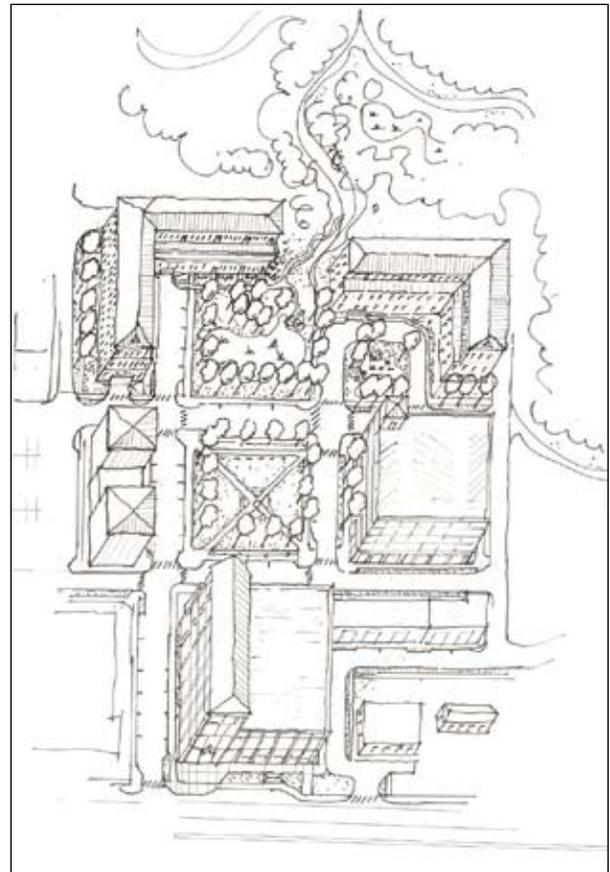
Successful infill should be quality development with its own character but it should fit within the context of its surroundings.

Municipalities should understand and acknowledge that infill can be more challenging than new development located on open space parcels. Infill generally occurs on smaller parcels and includes a mix of uses that require more careful planning, but does not necessarily result in greater profit. Rehabilitation of historic buildings is full of unknowns and sometimes involves removal of hazardous materials. Banks are sometimes reluctant to finance mixed-use projects because they are not the norm, and there are few developers experienced in such projects. Depending on the location, residential neighbors may also object to perceived increases in density and traffic.

A community can support infill development in their growth center through action such as:

- ◆ Setting the stage for community's acceptance of infill by conducting a public planning process and developing clear long-term vision statements in the municipal plan that promote infill development.
- ◆ Providing the needed municipal infrastructure wherever possible.

Figure 23. Infill Shopping Center



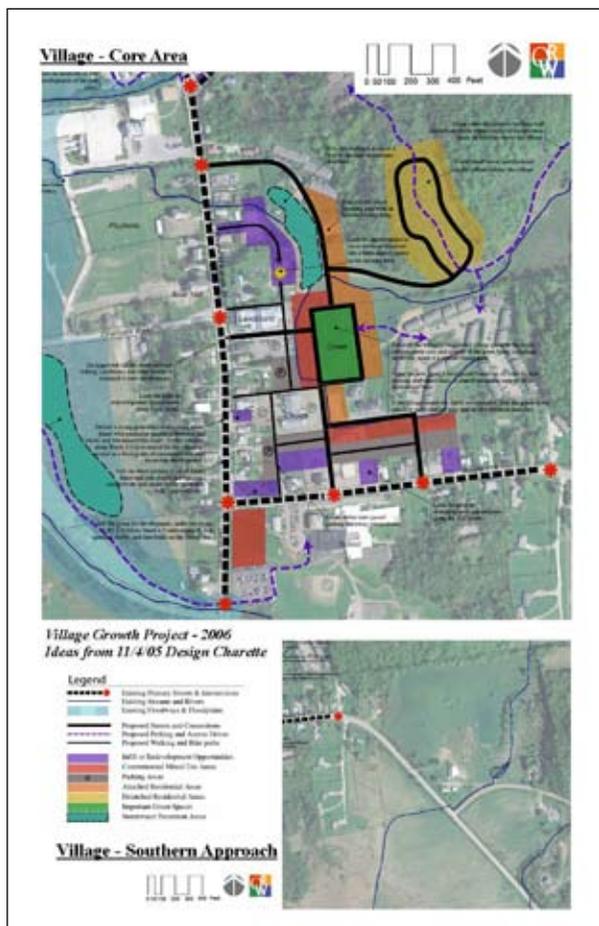
Outdated shopping centers, with low-investment structures, which may be located along main roads at the edge of a downtown are good candidates for infill development. Existing structures may be replaced entirely as shown in this conceptual plan for an empty shopping plaza in South Burlington or new structures may be added to the property. These centers may have new life as mixed-use developments that add vitality to the new growth center.

Figure 24. Infill Housing Development, Burlington



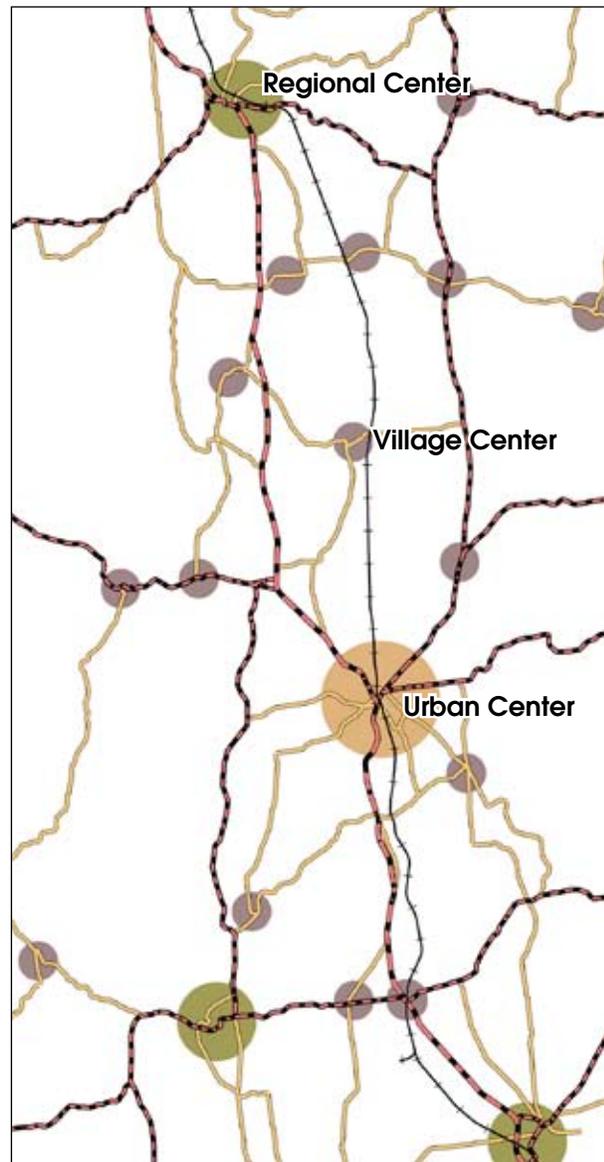
- ◆ Creating the necessary zoning regulations that encourage infill to occur.
- ◆ Streamlining the zoning process for infill sites, while coupling the swifter process with high design standards.
- ◆ Allowing mixed uses.
- ◆ Considering zoning benefits such as density bonuses, limited open space requirements and parking waivers. Frequently, high parking requirements for commercial uses discourage infill development on small lots.
- ◆ Allowing the assembly of lots to allow developable lot sizes compatible with the context of the neighborhood.

Figure 25. Plan for Infill in Hinesburg Village



ORW Landscape Architects and Planner, 2005

Fig. 26 Urban, Regional & Village Centers Diagram



REGIONAL FIT

One of the challenges of planning for a growth center is to establish a center that is appropriate in scale for the municipality and for the region. Traditional Vermont centers generally fit into one of the following in terms of their scale and role in the region:

- ◆ **Village Centers.** Vermont's village centers tend to be small and primarily residential (mainly single-family homes on small lots). They may have a few small businesses that provide basic goods and services to area residents. Historically, many of these centers had more commerce and industry than ex-

ists today. They typically developed along an intersection between a main and secondary road, often with a centrally located green or civic building. Others grew up around railroad depots or a location that could provide waterpower. Many of these centers are linear in nature and never developed a grid street pattern. Some municipalities may have several village centers.

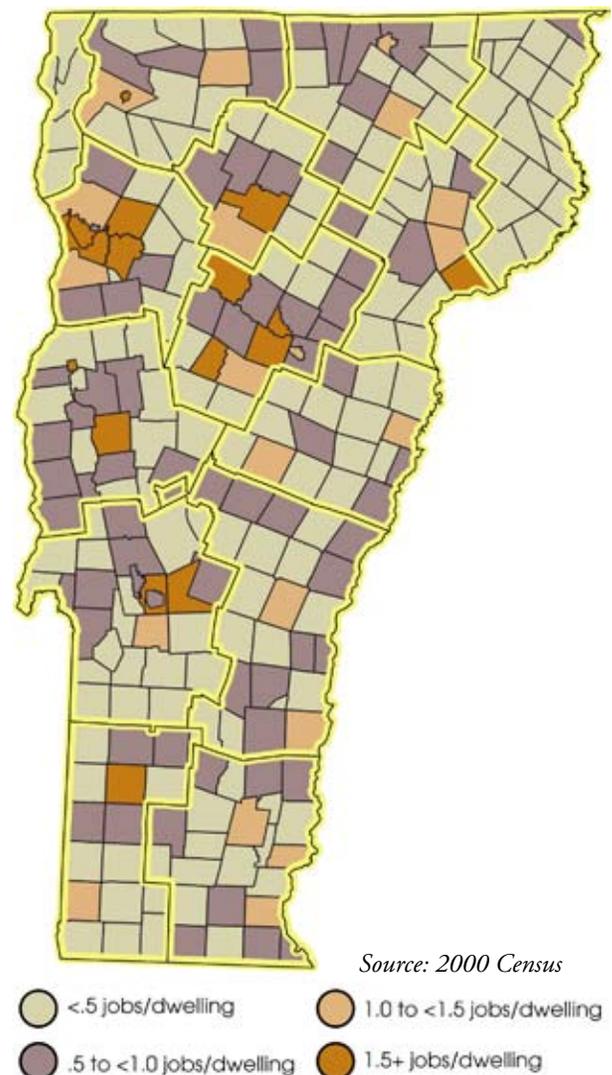
- ◆ **Regional Centers (Downtowns).** Traditional downtowns in Vermont are typically regional centers that were located near the intersection of major roads and easily accessible from surrounding communities. They typically have several downtown commercial blocks characterized by multi-story buildings with storefronts on the ground level and office or residential space on the upper floors. Blocks of largely residential neighborhoods radiate from the commercial core. There is a greater diversity of housing types including multi-family, attached units and rental housing. There is typically at least one major downtown in each of Vermont's counties and most have multiple regional centers.
- ◆ **Urban Centers.** There are a limited number of urban centers in Vermont. These communities are largely developed with limited amounts of land remaining as undeveloped open space, or working farm or forest land. There may be underutilized areas within an urban center that are available for redevelopment. Some vacant lands may remain undeveloped, but it is likely that there are constraining factors that have prevented productive use of this land in the past that will need to be considered. Opportunities may also exist for infill on individual lots where development potential has not been fully utilized. Typical types of infill include addition of accessory dwelling units to existing residential property or the replacement of a one-story structure with a multi-story one.

A growth center may be created through organic growth from an existing center, thus increasing the center's scale and potentially changing how it functions within its region. Those growth centers formed around a new town center will be adding a new center to the region. In either case, applicants will need to

consider the impacts of their growth center on the economic viability of neighboring centers.

Currently, there are a limited number of employment centers in Vermont, as illustrated in Figure 27 below (where municipalities with more jobs than dwelling units are shown in orange). Planning for a balance between job and housing growth within a proposed growth center will limit economic impact on neighboring communities. Increasing the number of residents who live and work in the same municipality can also further other growth center goals, including those related to transportation and sense of community.

Figure 27. Employment & Residential Centers



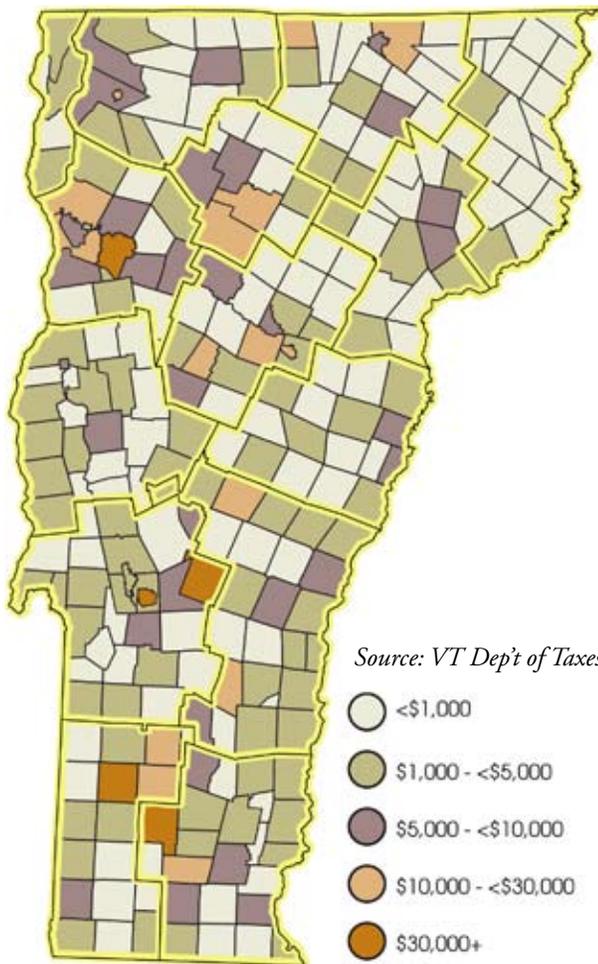


Figure 28. Per Capita Annual Retail Receipts 2005

Planning for the appropriate amount of retail space within a proposed growth center will be critical to limiting adverse impacts on nearby centers. As shown in Figure 28, a limited number of Vermont municipalities have established themselves as retail centers and are heavily reliant on consumers from outside the community. Municipalities are encouraged to consider what percentage of the region's projected retail needs should reasonably be located within their growth centers and how the growth centers will function within their region in order to limit the overbuilding of retail square footage.

ECONOMIC DEVELOPMENT

See Vermont Land Use Planning Implementation Manual, Community and Economic Development, Downtown Revitalization, and Brownfields.

See 10 Reasons Why Vermont's Homegrown Economy Matters, 2003.

HOUSING

See Vermont Land Use Planning Implementation Manual, Housing Programs and Housing Regulations.

Surveys have found that Vermonters are interested in living in downtowns if they can find reasonably priced houses in attractive, livable neighborhoods. The 2006 Annual Vermonter Poll conducted by the Center for Rural Studies found that:

- ◆ 1 out of 3 Vermonters would be willing to trade a larger home in a rural setting for an in-town location closer to services; these numbers have increased from 1 in 4 in 1998. In Chittenden County, 2 out of 3 people would prefer a home in an urban or village setting.
- ◆ Nearly 90% of respondents thought residential development should occur in or adjacent to existing downtowns or residential neighborhoods.

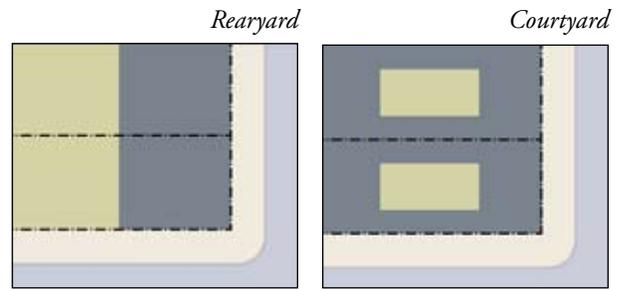
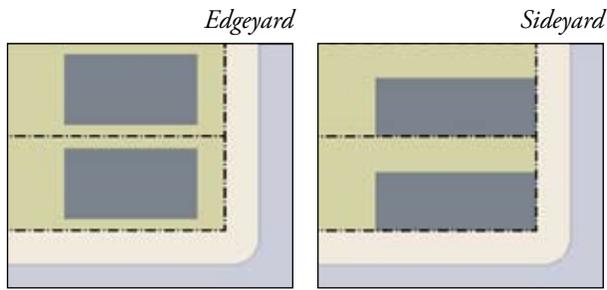
Housing Types

While the single-family home is the dominant type of residential structure in nearly all Vermont municipalities, other forms of housing were built historically and are being re-introduced throughout the state. Multi-generational housing was common into the early 1900s and many of Vermont's larger historic homes once housed several related family units with varying degrees of shared living space. Employers in some industrial centers built worker housing, in the form of duplexes, multi-family units or row houses. Boarding houses provided affordable living quarters for singles or couples without children.

Resort communities and rapidly growing suburban towns have seen the development of attached housing, but in most of Vermont, the majority of new housing that has been built in the past 50 years has been single-family homes on at least an acre lot. Therefore, many communities have little experience planning for greater diversity in housing types. The form-based SmartCode provides a useful system for classifying housing types based on four basic building forms as illustrated in Figure 29, opposite:

- ◆ **Edgeyard.** A building that occupies the center of its lot with setbacks on all sides.
- ◆ **Sideward.** A building that occupies one side of the lot with the setback to the other side. If

Figure 29. Housing Forms



SmartCode v.8.0, Duany Plater-Zyberk & Co., 2006

the adjacent building is similar with a blank party wall, the yard can be quite private.

- ◆ **Rearyard.** A building that occupies the full frontage, leaving the rear of the lot as the sole yard.
- ◆ **Courtyard.** A building that occupies the boundaries of its lot while internally defining one or more private patios.

Only the edgeward type is allowed under many municipality's zoning regulations, although PUD provisions offer the possibility of altering the dimensional standards. When planning for growth centers, consideration should be given to how one or more of the other three building forms could be permitted to diversify the community's housing stock. The target density of a growth center will largely dictate the housing forms that will need to be permitted.

Residential Densities

As illustrated above, attractive housing options can be built at a range of densities. Appealing, market rate, large family homes can easily fit on lots of ¼ acre or less. Smaller homes may fit onto 4,000 square foot lots and still have room for small enclosed yards with patios, gardens or play areas for young children. Multi-family housing can increase the diversity of housing options, allow for increased density and be compatible with other homes in the neighborhood as shown in Figure 30. In exchange for each lot not having a large back yard, common space, both open and wooded, can be provided to meet the need for recreation and the exploration of nature.

Residential density depends mostly on lot size and building type. Housing at densities from two to 20 units per acre can be built within developments very similar in character to the historic residential neighborhoods found around Vermont's traditional down-

Figure 30. Site Plan with a Mix of Housing Types



Vermont Neighborhoods Project, Vermont Forum on Sprawl

Figure 31. Housing Forms by Density



A: 55 units/acre B: 33 units/acre C: 29 units/acre D: 17 units/acre E: 12 units/acre F: 8 units/acre

Visualizing Density, Lincoln Institute of Land Policy

towns and centers. In most communities, the predominant residential type will likely continue to be detached homes on lots ranging in size from 5,000 to 15,000 square feet, which results in net development densities of 3 to 7 units per acre. Other housing forms, including duplexes, townhomes, and small apartment buildings can be mixed within largely single-family neighborhoods.

Photo E, in Figure 31 above, is of a residential neighborhood in St. Johnsbury. Some of the traditional

large homes remain single-family units, while others have been converted to two or more units. The lots are narrow and deep, a characteristic of lots in historic residential neighborhoods.

Residential Lots

Another hallmark of such neighborhoods is variable lot frontages so that the average width may be 70 feet, but lots may range from 50 to 100 or more feet in width. Variable lot sizes and frontages were created in some historic neighborhoods by subdividing ‘strip

lots' with widths of 15 or 20 feet. Buyers then purchased the strips in multiples of two, three or more creating a diversity of lot sizes and widths on the same street. This technique accommodated buyers at different price points, houses of various sizes and helped account for physical features of the land.

TRANSPORTATION

See *Vermont Land Use Planning Implementation Manual, Roads and Highways, Parking, Bicycle and Pedestrian Facilities, Public Transit, Rail and Airports, Transportation Demand Management (TDM)*.

A growth center will need well-functioning vehicle and truck connections to the state highway system. Most of Vermont's traditional downtowns and larger village centers are located on state highways. Many of Vermont's smaller village centers are located just off major highways.

Within the Core

The commercial cores of larger downtowns and urban areas are scaled to serve residents from around the region. For these communities, downtown traffic is a complex issue since their economic viability is intrinsically linked to the number of vehicles passing through. Yet where traffic volume is high and trucks make up a high percentage of downtown traffic, it is a challenge to maintain a comfortable downtown environment on the street. Rather than the roadway being a central gathering space, the high traffic roadway splits the town. However, projects designed to route truck traffic out of a downtown may result in fewer tourists and even regional residents not making unplanned stops as they are traveling through.

Significant improvements to the environment of a growth center core can be accomplished through streetscape design and traffic calming without reducing the amount of traffic on the roadway. Yet, the ability of a municipality to improve the character of its "main street" through renovation of the roadway, widening sidewalks, adding parallel parking or street trees, slowing downtown traffic, etc. can be limited on state highways. Greater flexibility is possible if jurisdiction of a state or federal highway through a downtown or village center has been taken over by the municipality.

- ◆ Woodstock, Vermont, is an example of a community that has worked hard to preserve

and promote its historic amenities and traditions that keep visitors coming to their Main Street – the heavily trafficked US Route 4.

- ◆ Waitsfield, Vermont addressed traffic issues in their downtown through the creation of the Slow Road, which parallels the main highway – Route 100 – and provides a more pedestrian-oriented commercial area.

Communities planning for a growth center associated with a new town center should be considering the existing roadway environment in their municipality. If a principal arterial or a highway with very high traffic volume passes through the planned growth area, it may be best to locate the downtown core off to one side of the roadway and to create a new "main street."

The essence of a successful "main street" commercial area is the quality of the pedestrian environment; the car should be secondary. When drivers come downtown they need to find parking, but from that point on, they turn into pedestrians. Streets should be a perfect habitat for walkers and strollers of all ages that includes the following elements:

- ◆ Buildings constructed to the edge of the sidewalk that enclose the street.
- ◆ Building façades that provide architectural interest and visual access into the building activity or displays.
- ◆ Inviting doorways into a variety of uses.
- ◆ Pleasant lighting at night.
- ◆ Street trees that provide shelter and shade.
- ◆ Parallel parking for easy access, which also serves to buffer pedestrians from roadway traffic.
- ◆ Wide sidewalks with curbs to keep vehicles from impinging on pedestrian space.

Figure 32. Main Street (Route 4) in Woodstock, VT





Figure 33. Interconnected Street Network

Interconnected Streets

As growth centers develop, they will likely require additional streets. In past decades, development in most Vermont towns gravitated to the edges of existing downtowns and village centers along existing roads. In order to promote compact development over linear, strip development, municipalities may need to plan for a system of interconnected streets that provide street frontage for new commercial and other mixed uses.

A grid of streets that divides the core of a growth center into smaller blocks has many benefits including:

- ◆ Creation of more street frontage for businesses and other uses.
- ◆ Better pedestrian access to businesses.
- ◆ Slower traffic as cars stop at intersections.
- ◆ Maximum on-street parking.
- ◆ Shared parking in block interiors.
- ◆ Alternative vehicle routes disperse traffic and reduce congestion on primary streets.
- ◆ Improved safety and emergency response because there are multiple routes in and out of neighborhoods for response vehicles and residents.
- ◆ Shorter, more direct pedestrian routes between neighborhoods.
- ◆ Better pedestrian scale and visual interest.

Road Design

The design of a road – its surface, width, grade, curvature, turning radius at intersections, etc. – greatly influences people’s driving behavior. Fast moving traffic is not appropriate in areas of dense, compact development. It creates unsafe conditions for pedestrians, bicyclists and children, and discourages people from using non-vehicular modes of transportation and enjoying many types of outdoor recreation. Streets in growth centers should enforce slow movement of vehicles through their design and provide ample public space for sidewalks, landscaping, street trees, street lighting, etc.

Transit Oriented Design

Transit Oriented Design (TOD) is a type of compact, mixed-use development that is located near transit facilities with high-quality pedestrian environments. TOD is seen not only as a way to promote transit ridership, but as a mechanism to further economic development and enhance community quality of life goals as well. For municipalities with transit service, or where transit service is likely to become available, TOD offers a model for development that furthers the smart growth principles of the growth center program. The Essex TOD Master Plan above illustrates how consideration for pedestrian scale, provision of trail and sidewalks, and access to transit can be integrated into a dense, compact center that promotes non-vehicular modes of transportation.

Parking

As suggested elsewhere in this manual, parking is a critical component of (or constraint to) planning for compact development. Within a growth center, parking should be efficient, occupy the smallest footprint of developable space and not diminish walkability. As much parking as possible should be flexible and

Figure 34. Downtown Parking Lot in Rutland, VT



Figure 35. Transit Oriented Design Master Plan for the Susie Wilson Road Corridor, Town of Essex



ORW Landscape Architects and Planner, RSG, Inc., 2006

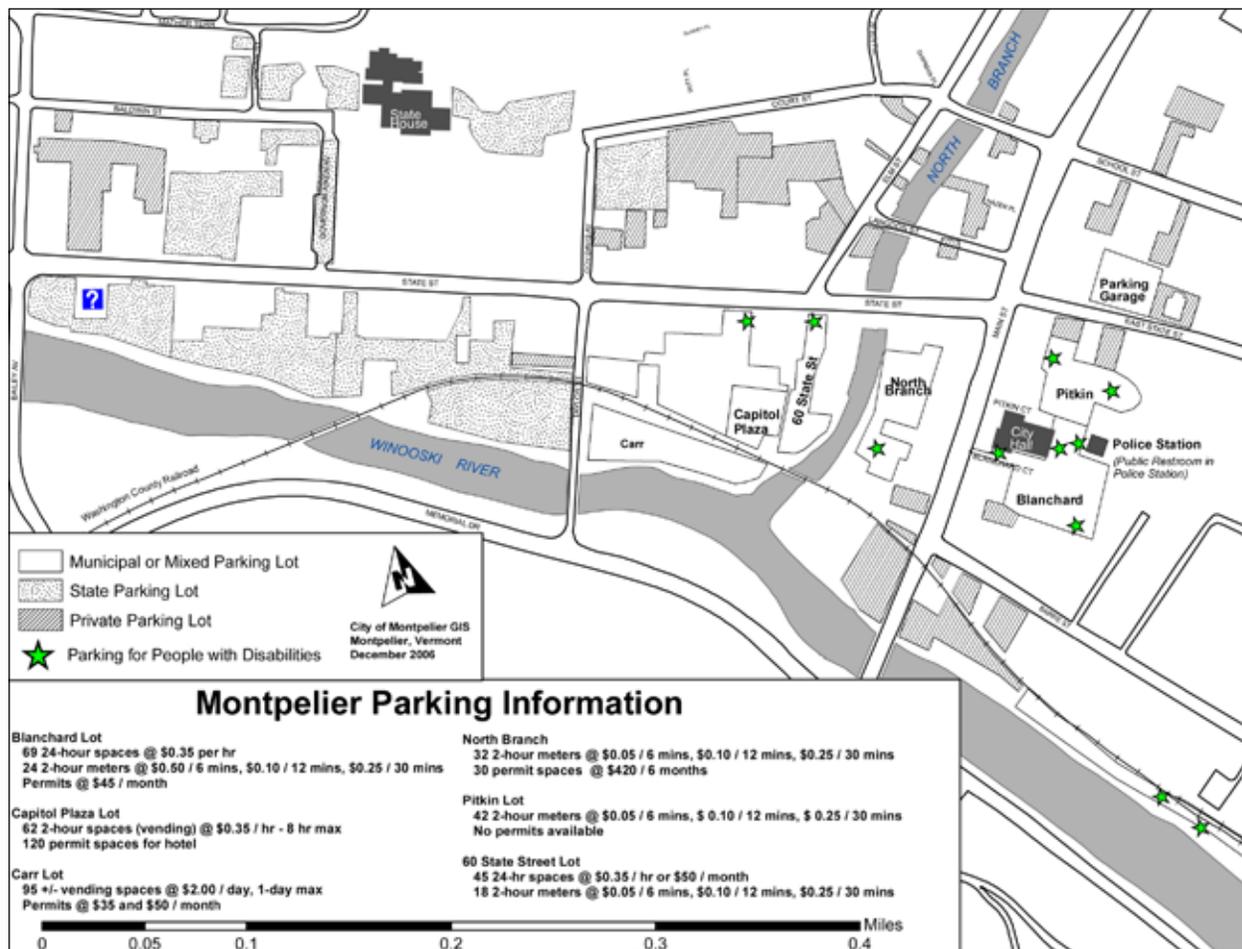
available to all users. Coincident to this must be the creation of easy and comfortable pedestrian links between all available parking venues. Drivers may not find a space directly in front of their destination, but will know that they will likely find a space within a block of their destination, and will experience a pleasant walk to get where they need to go.

Most zoning ordinances include parking regulations that no longer serve the community well and are not appropriate for development of downtowns or growth centers. These regulations assume that every customer, client or employee will be arriving by car and will drive to each destination. In addition, parking requirements are often based on close-to-peak-day use. Many businesses, especially national chain stores, have made it their own policy to provide excessive parking. This can be a problem for a municipality's effort to create a growth center based on smart growth principles.

Current thinking on parking asserts that, at the very least, parking requirements should be greatly reduced from current 1970s standards to reflect the availability of public transportation, on-street parking, municipal parking lots, shared parking potential generated by mixed uses, informal carpooling, and pedestrian and bike access from neighborhoods. Growth center parking options include:

- ◆ **Municipal Parking Lot.** The flexibility and turnover of spaces in a municipal lot makes it a very efficient way to provide parking for many businesses whose parking needs peak at different hours. A municipal lot provides more parking at less cost than individual lots. Parking needs are met with the minimum lot coverage and less stormwater impact. In addition valuable downtown property is preserved for buildings that can add vitality and density.

Figure 36. Downtown Montpelier Parking Inventory



- ◆ **On-street parking.** On-street parking is the most efficient means of providing downtown parking. It is visible, easily accessible, and because it only requires an extra 160 square feet of asphalt per space alongside an existing road, it is the least expensive. It also benefits pedestrians as it forms a protective buffer between moving traffic and the sidewalk. Diagonal parking is also possible on wider downtown streets where traffic is slow moving.
- ◆ **Shared parking.** Shared parking between one or more private businesses or civic uses can be useful in reducing the number and size of parking lots but requires clear municipal policies and negotiated agreements between two or more willing landowners whose land uses have significantly different peak parking characteristics. Such uses could be office, restaurants, retail, colleges, churches, cinemas, and special event situations.
- ◆ **Parking within and below buildings.** Underground parking, interior and exterior parking garages and parking decks provide needed parking while minimizing the footprint of parking in the downtown. Parking on the ground floor of a multi-story building achieves this goal but must not occupy the building's street frontage. Structured parking can be approximately 10 times more costly than on-grade parking and ground water or other subsurface conditions may also present engineering challenges in some areas. However, all these alternatives should be encouraged in preference to on-grade parking.