

# Springfield Town Plan

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# Springfield Town Plan

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## Chapter 3 — Natural and Scenic Resources

The health and vitality of Springfield's natural and scenic resources are critical to the quality of life of current residents and to the attractiveness of the town for prospective residents and businesses. This element of the Town Plan outlines the various natural resources in Springfield, presents some of the issues related to those resources and provides goals and policies for their future enhancement and protection.

### Surface Water

Springfield lies within the Connecticut River watershed. Much of the town also lies within the Black River Watershed (Basin 10), a subwatershed of the Connecticut River. The northeastern part of town lies within Basin 13, which includes the watersheds of smaller tributaries to the Connecticut River, including the Spencer Brook watershed (basin 13-09) which drains into the Connecticut just north of the Black River.

The Black River and Connecticut River were important resources for early power and transport. Major industry was located on the Black River where it could draw power for automated processes. Commercial and residential development grew up around these early industries both for the proximity and to take advantage of the gentler topography in the river valley. This development and former discharges into the river present challenges to the water quality of the Black River. In addition, the town's wastewater treatment facility was inadequate for the treatment of phosphorus for a number of years. Algae blooms often occurred in the mouth of the Black River in summer months, and the water was not safe for contact recreation from the downtown to the mouth. The Town has made major improvements to its wastewater treatment facility that decrease the amount of phosphorus discharged into the river. Although the water still may not be safe for swimming, it is on the road to recovery.

Because Springfield is located in the lower portion of the Black River watershed, it is critical that the Town work with other towns in the watershed in order to improve the overall health of the river. The Black River Watershed Action Team (BRAT) has been organizing river cleanup days on the Black River in Springfield, and is working with the Southern Windsor County Regional Planning Commission to expand membership to other towns in the watershed. The Town should support these efforts, as well as continuing to participate in the activities of the Connecticut River Joint Commissions that looks after the interests of the Connecticut River and its tributaries.

Today, the town of Springfield sees both the Black and Connecticut Rivers as major scenic and recreational resources. The Connecticut River has been designated an American Heritage River, and Routes 5 and 11 (into downtown Springfield) are part of the Connecticut River Scenic Byway. The recent construction of the Toonerville Trail on the former railroad bed next to the Black River offers bicyclists and pedestrians a recreational resource with scenic views of the river. Further upstream, the Riverside Middle School has planned a river access area in order to teach kayaking on the river. The level topography in the river valley also allows the corridor to function as a transportation and utility corridor. Many historic and archeological sites may be found in both the Black River and Connecticut River corridors (see Cultural and Historic Resources Chapter). The floodplain terraces along the Connecticut River provide an agricultural area that is unique in the town and a resource that is diminishing up and down the Connecticut

River valley.

Access to both the Black and Connecticut Rivers is limited. One access area for fishing is available at Hoyt's Landing on the Connecticut River, but there are currently no access areas on the Black River for recreation. The Town should continue to investigate areas to allow for public access and enjoyment of the Rivers, and should prioritize areas for conservation in order to protect the natural and scenic resource values that these rivers provide.

The Town has adopted a Riverfront Protection Overlay District which protects the shorelands, and resulting water quality, of the Connecticut River and the Black River up to Goulds Mill Falls. Similar protections should be considered for the remaining length of the Black River and its tributaries. Maintaining minimum development in floodplain areas is particularly important for protecting built resources as well as water quality in rivers and streams. When a river has access to its floodplain, it has a better chance to reach a stable state, causing less erosion and damage to structures and property. The floodplains of the Connecticut River and the Black River have been mapped as part of the National Flood Insurance Program by the Federal Insurance Administration of the US Department of Housing and Urban Development. These Flood Insurance Rate Maps (FIRM) became effective on December 4, 1979. The Flood Insurance maps for the Connecticut River and the Black River as far as Goulds Mills were updated in 1999, and those for the rest of the town are in the process of being revised.

Where floodplain protection is not possible, buffer areas of native vegetation should be maintained wherever possible. Steeper slopes and unstable soils require larger buffer areas in order to prevent river bank erosion and ensure the greatest amount of infiltration before overland flow reaches surface waters. The State of Vermont recommends 100-foot buffers next to larger rivers and ponds, and 50-foot buffers next to smaller streams and wetlands.

There are only two ponds/lakes in Springfield. The only natural pond is Bloodsucker Pond located in the northeast corner of town. The other water body is the impoundment above the North Springfield Flood Control Dam which was completed in the early 1960s. The North Springfield Dam retains about 90 acres of water surface area and provides multiple outdoor recreation opportunities including boating, fishing, picnicking, hiking, swimming, nature study, and camping.

### **Point and Nonpoint Source Pollution**

For the most part, direct discharges or "point sources" of pollution have been regulated on all water bodies in the State. While they have not been eliminated altogether, point source discharges are allowed only if permitted, and must be treated before they are discharged into a river. "Nonpoint source" pollution, generally that which is carried over land throughout the watershed into surface waters, is currently the greatest cause for concern in rivers, streams, lakes and ponds. Failed septic systems, also often difficult to pinpoint, may also contribute to high bacteria levels in surface waters.

The Town of Springfield has been in the process of upgrading the Wastewater Treatment Facility to reduce the amount of phosphorus that is discharged into the Black River. The upgraded plan will treat effluent so that it meets State standards for the level of phosphorus that may be discharged each day.

Stormwater runoff is one of the greatest vehicles for nonpoint source pollution. Water from storm events flows quickly over impervious surfaces such as roads and parking lots and may carry pollutants and sediment directly into surface waters if not diverted. Higher elevation headwater streams are most sensitive to pollutants and should be buffered from development activities. Similarly, steep slopes are both prone to erosion and unable to slow water flow from impervious surfaces, and should therefore be avoided when planning for development. In less densely populated areas, site planning techniques may be adopted to reduce the amount of impervious surfaces and slow down the flow as it travels over developed areas. In 2003, the Southern Windsor County Regional Planning Commission (SWCRPC), in cooperation with the Black River Watershed Action Team (BRAT), mapped the impervious surfaces within the 100- and 200-foot buffer area of the Black River. Recommendations for areas where improvement of vegetation in the buffer or better stormwater filtering techniques could improve water quality will be provided to the Town and to property owners at the conclusion of this study.

In the area of town served by the Wastewater Treatment Facility, downtown Springfield and North Springfield, stormwater is funneled into storm drains located in roadways and parking lots. The Town has separated most stormwater runoff from wastewater in order to reduce occurrences of overflow at the wastewater treatment facility. Unfortunately, this means that stormwater is released directly into the Black River. The basins (storm drains) are designed to catch sediment before it enters the river, decreasing the amount of solids that enter surface waters. For new development, natural methods of filtering and slowing water flow before it enters storm drains should be adopted wherever possible in order to decrease the amount of pollutants entering waterways. Currently the roof drains of several large buildings in the downtown drain into the wastewater treatment facility. If the stormwater separation project does not do enough to decrease the amount of overflow at the Wastewater Treatment Facility, stormwater from roof drains will have to be separated from wastewater as well. Should these efforts be implemented, it is advisable that stormwater from roof drains be naturally filtered (in catch basins or man-made wetlands) before entering waterways.

### **Wetlands**

Wetlands fulfill a variety of functions, including erosion control, flood storage, removal of pollutants, and wildlife habitat. The State of Vermont recognizes the importance of these functions in 10 V.S.A. §905. In 1990, the Water Resources Board issued the Vermont Wetlands Rules which classify all wetlands according to their functions. According to the Vermont Wetlands Rules, wetlands are:

*. . . those areas of the state that are inundated by surface or ground water with a frequency sufficient to support significant vegetation or aquatic life that depend on saturated or seasonally saturated soil conditions for growth and reproduction. Such areas include but are not limited to marshes, swamps, sloughs, potholes, fens, river and lake overflows, mud flats, bogs, and ponds, but exclude such areas as grow food or crops in connection with farming activities.*

The major functional values of wetlands are:

- Storage of flood water and stormwater runoff
- Protection of surface and groundwater through filtration of pollutants
- Habitat for fish, wildlife, migratory birds, hydrophytic vegetation, and threatened/endangered species
- Natural science education and research
- Recreational value; open space; aesthetics
- Erosion control through binding and stabilizing of the soil

The degree to which a particular wetland fulfills the above functions, rather than size, determines its significance. The wetlands mapped on the Natural Resources Map include the National Wetlands Inventory prepared by the US Department of the Interior and smaller wetlands mapped by the SWCRPC from aerial photos. Wetlands on the NWI maps include Class I and II wetlands (generally those over five acres in size). Class III wetlands are smaller or not deemed significant by the Vermont Department of Environmental Conservation. These smaller wetlands are not protected under the Vermont Wetlands Rules, but may be protected in an Act 250 review or by Section 404 of the Clean Water Act (review required for large or federally funded projects).

An important local wetland is the North Springfield Bog which is owned by the Town and managed by the Mt. Ascutney Audubon Society. This bog has been zoned as a Natural Resource Preservation District with access for pedestrians being the only use allowed.

### **Vernal Pools**

Smaller, seasonal or “vernal” pools, are generally defined as depressions with no inlet or outlet. Because these depressions fill up with water either from snow melt or rainfall, most seasonal pools are only wet in the Spring months (vernal pools) and dry up during the summer months. Vernal pools may be overlooked in site evaluations because they are only wet for a few months out of the year. However, these pools provide critical breeding habitat for many amphibians and invertebrate species. The Town should consider mapping important vernal pools in order to protect these valuable habitat areas.

### **Groundwater Resources**

The Town’s public water supply comes from an aquifer serving the Town's shallow well field in North Springfield. Extensive research was completed in the late 1980s to designate an alternate public water source, but did not succeed in locating one. Protection of the existing water supply is critical to the health of current and future residents. Development of a new water supply would be costly and could involve the use of chemicals and a treatment facility. The Town is currently in the process of delineating more precise boundaries for the North Springfield aquifer and has developed a Source Protection Plan (SPP) for the well field. The SPP identifies potential threats to this well field include the existing Vermont State Armory facility and the Public Works Department garage. Both of these existing facilities pose threats to this groundwater resource because of potential gas and/or oil spills/leaks from vehicles. Although the Town Garage has recently been added onto the town wastewater system, the Armory still has an on-site septic system, as does a residential property within the boundaries of the aquifer. Failure of either of these systems could potentially contaminate the water supply and threaten public health. Additionally, the potential exists for a gasoline or other hazardous material spill to occur along Fairground Road, and contamination from former underground storage tanks on a manufacturing

facility in the area has not been remediated.

In addition to the public water supply in North Springfield, there are two other water systems in town serving multiple households, according to the Groundwater Division of the Vermont Department of Environmental Conservation. These include the water supply wells for the Valley Mobile Home Park and the Windy Hill Acres Mobile Home Park. A “public community water system” is a water system which serves ten or more residential units. A wellhead protection area 300 feet in diameter around each well is protected from encroachment from incompatible uses. These three wellhead protection areas are identified on the Natural Resources Map in the appendix.

## **Resource Lands**

Agricultural and forest lands have multiple functions that all contribute to the town’s character and quality of life. Open land that is maintained in agricultural uses also provides scenic open views and rural character. Similarly, forest land that is managed for wood products or as wildlife habitat can have recreational and scenic attributes as well. In order to plan for future growth, the Town should consider the valuable scenic and resource lands in town and develop priorities for their protection.

### **Agricultural Resources**

There are several areas of Springfield which warrant consideration for preservation of agricultural resources. The first is the river flood plain terrace along the Connecticut River north of the Charlestown Bridge. This area with its very flat topography and good access has the attributes which make it prime for development. The Town has adopted a Shoreline Overlay District which limits development in the area next to the Connecticut River and up to the 400-foot contour line.

Other areas in Springfield which merit consideration for protection of agricultural resources are the hilltop pasture areas such as Parker Hill, Dutton District, Eureka, and Spencer Hollow; and open pastures on Town Farm Road, Highland Road, Barlow Road, and Randall Hill Road. These hilltop pastures intermixed with historical buildings and sites provide scenic open spaces which help create a very desirable rural character. Land use regulations and/or other means should be adopted to ensure that future development is sited so that agricultural functions and scenic values of these areas are preserved. This may be accomplished through siting new development on the edge rather than the middle of open fields, clustering of multiple unit developments, and preserving maximum open space or conserving land through the assistance of a land trust or other land conservation organization. *Growing Greener*, by Randall Arendt, offers methods of subdividing land that maximize the amount of open space protected while not giving up the number of houses allowed through normal density allowed through zoning.

### **Forest Resources**

The other resource land cover category is forested land. Throughout Vermont, about eighty percent (80%) of the land cover is forested with about twenty percent (20%) open land. Springfield is estimated to have somewhat more open land than the state average because of all the open fields in areas such as Parker Hill, the Dutton District and Eureka. Conversely, it is estimated that Springfield has less forested cover than the statewide average.

The Weathersfield Reservoir Municipal Forest encompasses about 86 acres and contains the Weathersfield Reservoir which was part of the former water supply for Springfield. This Town Forest, owned by the Town of Springfield, is currently being managed for timber and wildlife uses. Wildlife monitoring by Keeping Track, Inc., found that six important indicator mammals — black bear, bobcat, fisher, otter, mink, and moose — regularly use the reservoir and its watershed. Indicator mammals are those which are very sensitive to habitat change; their presence on the Weathersfield Reservoir land indicate that the habitat is healthy enough to support the presence of these animals. Volunteer monitors for Keeping Track have monitored the area’s mammals for three years. The Ascutney Mountain Audubon Society, a local chapter based in Springfield, has indicated interest in promoting wildlife habitat at the reservoir property through wildlife monitoring, removal of invasive plants, and planting native species of value to wildlife.

The other little used municipal forest is Meeting Waters Municipal Forest which is also known as the Bryant Forest. The primary use of this 197-acre forest is for forest management. Some limited use of the property has been made in the past few years for snowmobile trails and nature trails. The deed restrictions placed on the use of the property when it was conveyed to the Town of Springfield preclude uses other than recreation on the property; otherwise ownership of the property reverts to Dartmouth College.

Of the three town forests, Hartness Park has been developed with a network of trails and a picnic area; however, the Weathersfield Reservoir Municipal Forest and the Bryant Municipal Forest are under-utilized as recreational resources.

#### ***Urban Forest Resources***

More and more communities are beginning to recognize the very tangible benefits that trees provide in the urban environment. Healthy trees reduce air and noise pollution, provide energy-saving shade and cooling, furnish habitat for wildlife, enhance aesthetics and property values, and are an important contributor to community image, pride, and quality of life.

In Springfield, the Friends of Trees group organized in 2001 as a part of the Vermont Urban and Community Forestry program. The focus of its efforts is care and planting of trees in the downtown, but it is also working with the Town to develop town-wide tree care policies. Other activities are aimed at increasing public awareness of the value of trees and how to care for them.

#### **Land Enrolled in Current Use**

Almost thirty percent of Springfield’s total land area is enrolled in Vermont’s Current Use Program. This program, in which enrolled land is taxed at its “use value” rather than its development or fair market value, is an effective incentive for landowners to manage their lands for forest or agricultural purposes. As Table 3.1 shows below, Springfield has more enrolled agricultural land (almost 6% of the town’s total land area) than any other town in southern Windsor County. Almost 22% of the town’s total land area is enrolled as forest land. In order to plan for conservation of agricultural and forest land in the future, the Town may want to map areas that are currently enrolled in Current Use. The greatest benefits to wildlife habitat, resource planning, and agricultural functions occur when large contiguous areas of forest and/or agricultural land are maintained.

**Table 3.1 - Southern Windsor County Current Use Program**

Town	Total Acres	Forest	Non-Productive* Forest	Agricultural	Non-Productive* Agricultural	Total Enrolled Acres	% of Total Acres
Andover	18,432	2,881.3	45.75	326.23	0	3,253.28	17.7%
Baltimore	3,008	997.8	4	146.7	0	1,148.50	38.2%
Cavendish	25,344	5,945.04	147.66	609.72	.1	6,702.52	26.4%
Chester	35,776	11,196.8	142.09	1,133.91	4.4	12,477.20	34.9%
Ludlow	22,912	2,416.44	11.76	212.13	0	2,640.33	11.5%
Reading	26,560	7,450.61	131.1	628.41	0	8,210.12	30.9%
<b>Springfield</b>	<b>31,552</b>	<b>6,878.96</b>	<b>151.6</b>	<b>1,796.4</b>	<b>2</b>	<b>8,828.96</b>	<b>28.0%</b>
Weathersfield	28,032	4,368.16	95.35	1,479.53	0	5,943.04	21.2%
West Windsor	12,544	1,257.29	54.9	358.47	0	1,670.66	13.3%
Windsor	15,808	1,665.42	58.7	623.54	0	2,347.66	14.9%

\* Conditions which cannot adequately support those uses due to steep slopes, ledge, or wet soils.

Source: State of Vermont, Division of Property Valuation and Review, August 2001

## Critical Habitat Areas

The State maps points where threatened or endangered plant and animal species have been identified as well as critical habitat areas for larger mammals such as deer and bear. The Natural Heritage Inventory indicates locations of threatened and endangered species, but does not identify what those species are. These points may be used as areas to avoid when planning for development or other activities. In addition to several Natural Heritage Inventory sites being located in town, the town hosts one “Important Bird Area” (IBA) designated by the Mount Ascutney Audubon Society as part of the Vermont Audubon Society’s Important Bird Area Program. This site, on Skitchewaog Mountain, is nesting habitat for Peregrine Falcons and Ravens. Designation of a site as an IBA is both a tool for assisting private landowners and public land managers and a rationale for preserving habitat from threats.

## Deer Wintering Areas

The boundaries of existing winter deer yards have been mapped by the Department of Fish and Wildlife (see the Natural Resources Map in the Appendix), but are subject to change due to fluctuations in environmental conditions. Deer wintering areas need to be protected from indiscriminate logging, residential and commercial development, and intensive winter recreation. Through Vermont’s Act 250, some protection is available under Criterion 8(A) - Wildlife Habitat and Endangered Species, which provides a detailed system to weigh evidence for a project and determine if a permit can be allowed.

## Contiguous Forestland and Travel Corridors

Large mammals such as moose, bear, deer, and bobcat, and a variety of songbird species rely on large contiguous areas of forest for food, shelter, breeding grounds, and migratory stop-overs. The fragmentation of such land can result in decreases in the number of species and the sizes of populations of many species. A variety of songbirds reside in wooded areas that are

characterized by less intense human use. Moose also require large wooded areas, with home ranges as large as four to ten square miles. The Connecticut River Valley is a flyway for migrating songbirds. Maintaining a wide buffer next to the River is important for the preservation of this important travel corridor.

### **Invasive Species**

Invasive species include plant species and other organisms, such as zebra mussels, that are a problem throughout the town, threatening surface waters as well as forest and wildlife habitat. Invasive, non-native species alter habitats by displacing native species on which organisms depend, while being of little use to those organisms themselves. This can be particularly detrimental to rare, threatened, and endangered species, which often require specialized environments to ensure their survival. Recreational opportunities may also be impaired by the proliferation of invasive species.

Most invasive plants seem to be concentrated around rivers, streams, and wetlands in the area. Eurasian watermilfoil is an aquatic species, which can be found at the confluence of the Black River and the Connecticut River, above and below Hoyt's Landing. Purple loosestrife, the familiar beautiful flowering perennial plant of wetlands, is invading cattail marshes along the Connecticut and elsewhere. On the streambanks and along roadsides, Japanese knotweed, commonly referred to as bamboo, is quite widespread, notably along the Black River in the area of the North Springfield Dam.

Exotic honeysuckles, barberries, and buckthorns are all invasive shrubs or small trees that monopolize the understory of forests, both along the streams and farther upland, especially where the ground has been disturbed, as in logging. Buckthorn is considered to be a major threat to the survival of future timber stands. Invasive insects, such as the Hemlock Woolly Adelgid, pose a serious threat to forested riparian zones that are often comprised of significant quantities of eastern hemlock.

### **Air Quality**

Springfield does not have a heavy industrial base or concentrated population that has led to an air quality problem. Accordingly, the town's air quality constitutes an environmental resource that has aesthetic as well as human health benefits. Elements that could negatively impact air quality include: smell, light, particulate matter (dust, smoke, fumes), radiation, and chemical vapors.

Air quality becomes an issue when projects or facilities emit pollution into the air or when traffic increases combine with air inversions to reduce dispersal of exhaust and other pollutants. Pollutants may also travel into the town from other areas, such as acid rain resulting from high stacks in the mid-western states.

Springfield's ambient air quality should be maintained. The town should set an example in not causing pollution through radiation, excessive noise, odor, or air-borne contamination. Town policies and activities should be made within the perspective of keeping our air quality high. Town equipment should meet emission standards. The effects of traffic congestion should be monitored when air quality degrades. The town should be zealous in responding to complaints about open air burning or other activities that violate state air pollution control regulations. The town should take an active role in the review of development proposals or plans that could

adversely affect air quality.

### **Noise and Light Pollution**

Noise and light pollution from development can negatively impact the rural character and quality of life of much of Springfield. The Stellafane amateur astronomers gather in Springfield every year to look at the stars from the historic Stellafane observatory, and are particularly concerned with excess light pollution emanating from structures in the downtown. The Town has established an overlay district to protect the areas around two working observatories from light pollution. In addition, standards have been set for lighting on developments in other areas of town. Lighting levels should be a balance between aesthetics, security, and energy efficiency.

Noise pollution at certain levels can dramatically alter the character of a neighborhood. The town should be aware of the noise levels of its own activities, and should work to establish appropriate noise thresholds for the review of proposed developments.

### **Mineral Resources**

Springfield has deposits of mineral resources of varying size and quality. These resources may have the potential to contribute to road maintenance, the manufacture of building materials, and other enterprises. Earth resources are a non-renewable resource which should be used judiciously. Reclamation plans for areas where mineral resources have been extracted need to assure safety, aesthetics and use for future generations.

In order to plan for the most efficient use of Springfield's earth resources, the Town should complete an inventory of resource areas. The town should take an active role in the local and state review of development proposals that potentially affect earth resources. If projects are proposed to add new areas for extraction of Earth Resources, it is very important that review procedures are in place to address impacts on neighborhoods, the environment, and the ability to reuse the land.

### **Goals**

1. Protect healthy headwater streams from impacts of development and improve conditions for impaired or threatened surface waters.
2. Develop programs to improve water quality in the Black and Connecticut Rivers in order to maximize their scenic and recreational resource values.
3. Participate in watershed level planning activities for the Black and Connecticut River watersheds
4. Protect wetland functions, including filtering of pollutants, wildlife habitat, flood control, education, aesthetics, and erosion control.
5. Protect public water supplies from contamination and plan for potential future public water supply needs.
6. Identify and protect rare and endangered species and their habitat areas from being disturbed or destroyed.

7. Maintain and improve critical habitat areas for all native wildlife populations.
8. Protect important scenic resources for future generations.
9. Protect deer wintering areas from encroachment.
10. Maintain high standards of air quality.
11. Ensure that future development does not negatively impact community character or quality of life by developing standards for light, noise, odor, and dust.
12. Encourage the care and improvement of the urban forest.
13. Identify and remove non-native invasive species from public forest land in order to protect native species and habitat.
14. Identify and map vernal pools in order to protect critical habitat areas for amphibians and invertebrate species.
15. To utilize the Connecticut River Corridor Management Plan as a guide for the protection of the Black and Connecticut Rivers.

## **Objectives**

1. Identify important wetlands for inclusion in the Natural Resource Preservation District and/or implement buffers next to designated (NWI) and non-designated wetlands. The North Springfield Bog has been designated as a Natural Resource Preservation District. This district or category could be appropriate for other wetland areas.
2. Establish land use planning policies which require applicants for subdivision and zoning permits to detail the locations of all wetlands, vernal pools, and perennial streams and to meet specific guidelines for setbacks and protection of these resources. Such guidelines could be developed by a Conservation Commission in cooperation with the Planning Commission.
3. Maintain buffer areas of native vegetation next to rivers and streams wherever possible. Steeper slopes and unstable soils require larger buffer areas in order to prevent erosion and ensure the greatest amount of infiltration before overland flow reaches surface waters. The State of Vermont recommends 100-foot buffers next to larger rivers and ponds, and 50-foot buffers next to smaller streams and wetlands.
4. Maintain the Weathersfield Reservoir and land as a potential future water supply as well as habitat area for a number of large mammals. Maintenance may include upgrading the dam and storage capacity if and when needs justify the expenditure. Consider designating the Weathersfield Reservoir as an alternative source of drinking water.
5. Continue efforts to reduce the phosphorus loading at the discharge point from the waste water treatment plant in order to improve downstream water quality.
6. Protect the existing groundwater aquifer in North Springfield area by minimizing the potential for adverse impacts from existing development and restrict land subdivision and development projects which could be incompatible with aquifer protection within the

recharge area.

7. Efforts should be continued to ensure protection of wellhead areas through relocation of the Town Garage and State Armory. Consider locating and establishing an alternative source of drinking water.
8. Maintain valuable agricultural lands in the Connecticut River valley to preserve agricultural land and archeological resources. Techniques may include clustering of development, conservation subdivisions, agricultural zoning, etc.
9. The Town should continue to investigate areas to allow for public access and enjoyment of the Black and Connecticut Rivers, and should prioritize areas for conservation in order to protect the natural and scenic resource values that these rivers provide.
10. Continue to actively support current use programs and/or local tax stabilization agreements for working farms and forest land. Consider special districts where adjacent land owners have designated their land to land reserve efforts.
11. Encourage the formation of a Town Conservation Commission. Create resource mitigation policies which allow for certain lands to be developed while protecting critical resources. Such policies might include creative development techniques such as cluster housing and/or the designation of land reserve zones which would be large enough to protect the critical nature of the resource.
12. Improve access and use of Springfield's three municipal forests.
13. Pursue planning and implementation of recreational uses of the land such as trails for hiking, snowmobiling, mountain biking, and cross country skiing.
14. Continue working in cooperation with the Vermont Department of Forests, Parks and Recreation in developing and implementing long-range multiple-use management plans for all three Town Forests.
15. The Town needs to proceed cautiously in interpreting with the Bryant heirs the definition of "development" as it relates to improvement for recreational uses.
16. Protect deer wintering areas and other wildlife habitat areas in order to maintain the resident wildlife as well as maintaining a long-term viable deer population.
17. Continue efforts to identify and protect rare and endangered species.
18. Noise and odor pollution at certain levels can dramatically alter the character of a neighborhood. The town should be aware of the noise levels of its own activities, and should work to establish appropriate noise and odor thresholds for the review of proposed developments.
19. In order to plan for the most efficient use of Springfield's mineral resources, the Town should complete an inventory of resource areas and develop review procedures to address impacts on neighborhoods, the environment, and the ability to reuse the land.

20. Develop policies for the protection and maintenance of trees on town property and in public rights of way. Coordinate policies with those of the public utilities. Allocate funds and pursue funding opportunities for tree planting and care.
21. Incorporate provisions in the town zoning ordinance that encourage the preservation and planting of trees.
22. Discourage residents from planting invasive plant species that threaten native plant and wildlife habitat. Develop educational programs concerning invasive species.

## Chapter 7 — Transportation

Transportation networks influence patterns of land use and development. Likewise, location and types of land uses can have a profound effect on the adequacy and efficiency of roadway infrastructure and traffic patterns. In Springfield, the first major road through Town was the Crown Point Military Road which extended from Charlestown, NH to Crown Point, NY. Later, roads and railroad spur were located in the flat Black River valley due to the topography of the surrounding hills and the use of waterways for powering early industry.

The roadway network in Springfield is largely the same as it was 100 years ago. A few local roads have disappeared, several have been improved and paved, but the pattern remains very similar. Three major transportation developments influenced the modes of transportation in town. In 1868, Springfield interests contributed time and labor to cut through a hill and build a railroad to reach Sullivan County at a point closer to the Cheshire Bridge than Charlestown. This point became known as “Springfield Station” — on what is now Mineral Street — and thereafter became the destination to which most Springfield freight was delivered. The railway and its tracks have long since been removed and were recently replaced with the Toonerville Trail, a bike and pedestrian path. The second major addition to the Springfield transportation network was Hartness State Airport, constructed in the early 1920s. While this airport is little used for commercial air transportation, it was an important addition for the machine tool industry that was for many decades the center of Springfield’s economy. The third addition to the transportation infrastructure, and the most important in terms of its impact on the current land use and economy was the development of Interstate 91 and the Exit 7 interchange in 1965.

The location of the interstate in relation to industrial areas impacts the number of trucks and heavy vehicles using Route 11 through the center of town. In addition, the increased number of automobiles on the road; automobile-centered retail development; more dependence on truck delivery with larger vehicles; and increase in commuter traffic through town to and from I-91 have created peak hours of heavy traffic. In the downtown the location of Routes 11, and the main connecting side streets, the intersection misalignment, the varying road widths, and the inadequacy of signals and signage adds to the traffic circulation congestion and delays during the peak hours.

This chapter examines the existing transportation infrastructure in Springfield and discusses possible solutions to transportation problems. In congested areas, the principles of access management may be used to increase mobility, safety, and access for pedestrians, bicyclists, and motorists. Access management allows proper and economically sound development of land use along these corridors, while maintaining the functional capacity and efficiency of the abutting highways. Alternative forms of transportation, and the facilities to accommodate and make these alternatives possible, can relieve congestion by allowing motorists to leave their motor vehicles home and still get to work, shop or play on public transit, bicycles or as pedestrians. Rearrangement of intersections, construction of roundabouts, and better signage may also be used to relieve congestion and allow traffic to move more smoothly on existing roadways.

When the roads of the Town of Springfield have been improved using the tools mentioned above, they will accommodate more traffic, more efficiently on the same street widths. This has the

potential for economic and commercial growth with less congestion and more efficient use of the same road network that has existed for 100 years.

## Roads and Bridges

The Town of Springfield maintains 123.55 miles of Class I, II and III town roads and owns an additional 5.05 miles of Class IV roads that are not maintained. Routes 5, 11, 10, 106, 143 and I-91 are State Roads (see Map 1) which serve the Town of Springfield. These Class I and Class II State Highways are under the jurisdiction of the Vermont Agency of Transportation (AOT), except for those portions within the urban compact lines which are municipally maintained.

### Road Classification

<u>Highway Class</u>	<u>Class Definition</u>	<u>Mileage</u>
Class I	Primary Town Highways	2.88
Class II	Secondary Town Highways	19.94
Class III	Municipally maintained roads	100.73
Class IV	Non-maintained roads and trails	<u>5.05</u>
	TOTAL	<u>128.60</u>
	TOTAL CLASS I - III (maintained) Roads	<u>123.55</u>
<u>State Interstate</u>	Interstate Highway No. 91	9.03
<u>State Highways*</u>	State Route 5	9.12
	State Route 10	0.83
	State Route 11	5.38
	State Route 106	<u>3.74</u>
	<u>TOTAL NON- INTERSTATE STATE HIGHWAYS</u>	<u>19.07</u>
	<u>TOTAL STATE HIGHWAYS</u>	<u>28.10</u>
	<u>TOTAL TRAVELED HIGHWAYS</u>	<u>151.65</u>

\*These are Class I State Highways. Route 143 is a Class II State Highway. It is on the State Capital Budget for reconstruction (Five Year VTrans Program), as part of the "Correctional Facility Agreement" with the State.

### Road Condition

The Public Works Department maintains a database with road and bridge conditions and schedules maintenance based on that data. Of the 123.55 miles of Town maintained road, 85.39 miles have a condition rating of 71 (out of a possible 100) points or better. The Public Works Department last surveyed the Town roads in 1998, and since that time have repaved, rebuilt or added gravel to approximately 44.72 miles of road (27.11 miles rebuilt and repaved, including state aided paving, 17.39 miles gravel added). After this work these sections of the Town roads are rated 80 points or better.

The Criteria for Evaluating Road Sufficiency are based on structural condition, service, and safety are as follows:

<b>Criteria</b>	<b>Total possible points</b>	<b>Description</b>
Structural Condition	50 points	Structural condition describes the physical state of the highway and its ability to carry its present traffic load. Points are deducted for problems with the road foundation, earth slides, drainage, and pavement conditions.
Safety	25 points	Safety evaluations consider design characteristics, such as roadbed width, surface width, sight distances, consistency of alignment and grade, as well as, accident frequency.
Service	25 points	Includes factors such as the efficient movement of traffic, excessive grades, surface width, restricted clearance or any other combination of elements that curtails service to the motorist.

The Road Sufficiency of the Town highways is:

<b><u>Road Sufficiency Rating</u></b>	<b><u>Mileage</u></b>
Town Highways Rating 71 <b>points</b> or better	85.39
Town Highways Rating 51 to 70 <b>points</b>	27.63
Town Highways Rating 50 <b>points</b> or less	<u>10.53</u>
<b>Total Town Highway miles (Class I - III)</b>	<b>123.55</b>

### **Bridge Condition**

There are 41 Town bridges or culverts exceeding 36 inches in diameter, with a span of less than 20 feet in length, and 17 Town bridges with a span exceeding 20 feet. In addition, there are two state maintained bridges of less than 20 feet and 6 state bridges exceeding 20 feet.

The Criteria for Evaluating Bridge Sufficiency are as follows:

<b>Criteria</b>	<b>Total possible points</b>	<b>Description</b>
Structural Adequacy and Safety	55 points	Condition of the superstructure, substructure or culvert to support traffic.
Serviceability and Functional Obsolescence	30 points	Evaluates other maintenance and performance issues, the volume of traffic that the bridge serves, and the ability of the bridge to accommodate current traffic demands.
Essentiality for Public Use	15 points	Evaluates the impact of retiring the bridge in terms of traffic volume and length of the consequent detour.

The Springfield Public Works Department categorizes the bridges, based on the above criteria, as follows:

<b>Points</b>	<b>Category</b>
0-50	Poor: Eligible for replacement
50-80	Fair: Eligible for rehabilitation
80-100	Good.

The town bridges are on average in the “Fair” category, with most of them in the 60 to 90 point range. Since 1998 five bridges have been reconditioned. There are five remaining bridges in the low “Fair” category. The design plans for the reconditioning of these five Town bridges are completed and Springfield is awaiting funding for the repairs.

The Paddock bridge is an historical Town-owned bridge. Because of its “historical” designation, there is 100% non-Town funding to rehabilitate this bridge, which should be completed by 2005.

Two state-assisted, on-system bridges in need of reconditioning are the McDonald’s Bridge and the Community Center Bridge, both on Route 11. The McDonald’s Bridge is in the State Capital Budget for reconditioning within the next two to three years. The Community Center Bridge is not yet in the State’s Capital Budget.

### **Intersection Congestion**

Peak morning and afternoon traffic congestion and conflict of movement occurs at three signalized intersections: 1) Main/Park/Summer Hill in the downtown, 2) at Clinton and South Streets, and 3) in the area of the Springfield Plaza at both the Plaza signal and at the intersection of Routes 11 and 106. In addition, there is concern about potential traffic problems, especially with turning movements, at the new intersection at the Correctional Facility and Route 11.

#### ***Main/Park/Summer Hill***

The narrowness of Summer Hill and Park Streets and the westbound Main Street at this intersection, as well as on-street parking on Main Street in both directions, cause congestion at this signal. The location of the State Office Building on nearby Mineral Street adds to the traffic count and conflicting turning movements at this intersection.

The narrowness and on-street parking make solutions difficult. Parking is at a premium at this location. If the on-street parking were eliminated on Main Street for a short distance on both approaches to the intersection, the added width could be used for a dedicated right turn lane for Main Street traffic onto Park and Summer Hill Streets. This could relieve some of the back up on Main Street in both directions.

The current signal delay on Main Street, which allows eastbound traffic to turn left onto Summer Hill before allowing westbound traffic to proceed, is the source of conflict and concern. It may resolve congestion for the eastbound traffic, but left turning westbound motorists are not warned that their left turn is in conflict with the westbound through traffic. Upgrading the west and eastbound signal with a left turn arrow, vehicle activated, would more safely allow for left turn movements in both directions.

The Traffic signal at this intersection is on a three-phase cycle for traffic with a fourth phase for pedestrians. Taking the pedestrian cycle off the phases, unless activated by a button, would enhance the level of service of this intersection. In addition, loop detectors, installed on Park and Summer Hill, would lengthen the green cycle for Main Street until the presence of a vehicle activated the loop detector and its respective green light.

#### ***Clinton Street/South Street/Mineral Street***

The Clinton Street/South Street/Mineral Street intersection has a very confusing set of islands, a constant blinking yellow light, and an abrupt change in direction for main traffic flow. Turning movements from Clinton onto South or Mineral Streets are dangerous. For instance, a motorist turning left off of Clinton onto South or Mineral streets has to note the intentions of motorists oncoming on Clinton and South and Mineral Streets and, at the same time, make sure the motorist turning right from Clinton onto South Street is going to stop at the sign.

A “round about” solution at this intersection would put all the cars into the same counter-clockwise movement and eliminate opposing turning movements, resolving much of the confusion here. Other possible solutions are the activation of the signal, or realignment of the intersection.

#### ***Springfield Plaza***

The location of the Springfield Plaza, McDonald’s intersection, and the number of turning movements in and out of these location, plus the alignment of the Route 11 and Route 106 creates congestion. This situation is aggravated by the lack of a dedicated right turn lane into the Plaza for eastbound vehicles on Route 11. A realignment or reconfiguration of Route 106 southbound as it approaches this intersection may be a remedy to the congestion here.

#### ***Correctional Facility & Route 11***

This intersection was thoroughly discussed with VTrans in the Act 250 hearings. The Town still has its concerns. The grade of the Correctional Facility road at Route 11 is steep for large vehicles exiting the facility, especially in icy road conditions. The width of Route 11 and poor sight distances make turning movements, especially left turns into and out of the facility, potentially dangerous.

Traffic signals at this intersection may not be warranted, but a dedicated left turn lane into the facility and a flashing yellow light, warning Route 11 traffic of the danger at the intersection, would ameliorate the potential traffic problems as the facility begins to generate more traffic.

The town would greatly benefit from collecting information on traffic counts along local roads, turning movements at the main intersections, and parking usage at the municipal lots. Presently, data on traffic volume on municipal roads or the usage of municipal parking areas is not available. It is important to know if and how any of these are changing, to identify areas needing improvements, and to plan the implementation of improvements according to a needs priority.

### **Exit 7 Interstate Interchange**

The Exit 7 Interchange serves several purposes. It is the gateway to the town for commuters, tourists, goods transporters, and those who are traveling through town to other destinations. The interchange area also serves travelers on Interstate 91 who need to stop for fuel, lodging, and food. Although some services for those traveling on the Interstate are desirable, commercial

activities located at the interchange should complement rather than compete with those located in the downtown. Particular attention should be paid to retaining the present natural and scenic characteristics of the interchange area, and traffic should continue to move efficiently to take people from the Interstate to the downtown.

As employment centers in the Upper Valley continue to expand, more and more commuters are expected to drive from locations to the north and south of the Hanover/Lebanon areas. In order to decrease the amount of commuter traffic and save energy, a park & ride lot and connection to public transportation would likely be well used.

The Toonerville Trail bike and pedestrian path crosses under the Interstate. Any development activities that take place in the area should ensure the safety of bicyclists and pedestrians using this path. In order to address the issues of concern around the Exit 7 Interchange, the town could consider the following: 1) an access management program that would control curb cuts; 2) expanded site plan review that would include lighting, noise, aesthetics, signage, landscaping and screening, parking and open space; and 3) a park & ride lot.

## **Downtown**

### ***Parking***

While the number of parking spaces in the downtown may be adequate for the needs of local businesses, parking on Main Street is at a premium. There are two factors that cause the parking crunch: inadequate signage directing drivers to nearby parking, and owners and employees parking in spaces that were planned for their customers and patrons.

There is a need for clear and visible directional signs and better line markings for the parking lots behind the Bank Building, and across the Park Street bridge. There is also a need to designate certain areas for employee parking for both downtown businesses and the State office building, and others for short-term parking for customers of Main Street businesses. The State employee parking lot that lies between Mineral Street and the river is underutilized. Likewise, the parking lot behind the Bank Building is underutilized and could accommodate business owners, employees and their customers. The lot on the westerly end of the Park Street bridge is often used by State employees, whereas it would be an ideal location for short-term overflow parking for customers of Main Street businesses.

Recently a parking enforcement officer was authorized by Springfield. In addition, two-hour parking limit signs have been restored to the downtown area streets. This, along with the cooperative effort of owners and employees to park in the proper off-street lots, should assist in keeping the street parking available for customers and patrons.

### ***Traffic Flow and Emergency Response***

Traffic flow through downtown is congested during peak hours and is exacerbated by the lack of directional signs. Factors which have an impact on westbound traffic are: two lanes reducing to one lane at the easterly end of Main Street; on-street parking; and traffic signalization at the Main Street/Park Street/Wall Street intersection. Factors impacting the flow of east bound traffic entering downtown from the head of the Square are: no left turn lane for the movement to Elm Street and Valley Street; and, on-street parking.

If an incident causes congestion anywhere along Main Street, River Street and the Old Chester

Road, response by fire, ambulance or police personnel is extremely difficult, as there are no alternative routes or a bypass around the congestion.

### ***Ski Traffic and Commerce***

While congestion is a problem in downtown Springfield during the week, at other times businesses in the downtown would like to see more traffic travel through town. Much of the ski traffic to and from Okemo Mountain and Killington bypasses Springfield, using Route 103 through Chester and Rockingham instead of Route 11 through Springfield. Signage on I-91 giving motorists the information that Okemo can be accessed from Exit 7 and signage at Gassetts, emphasizing that I-91 can be reached by a left turn onto Route 10 might bring more skiers through Springfield. Additionally, after Ludlow, there is little opportunity for inbound skiers to grocery shop and for outbound skiers to stop and eat on the way home. There are businesses and services unique to Springfield and not available in Chester or Ludlow. By routing traffic through Springfield, all businesses are exposed to more persons, who may return during their visits to Okemo or Killington to shop in Springfield.

### ***Signage***

Traffic flow and congestion, traffic safety, touring motorists, truck delivery services, and emergency services could all benefit from better signage in the Town. Street and Highway names and numbers, lane directional arrows, directions to I-91, State Building, Town Offices, Police, Fire, Emergency Rooms, Schools, Community Recreational Centers and Parks, to name a few, could be more obvious and placed more conveniently to give motorists earlier notice and clearer directions to these facilities.

E-911 addresses are now assigned to all locations. These numbers should be clearly and prominently located on all parcels, rural and downtown, to allow efficient and timely response for emergency services.

### **Scenic Roads**

Route 5 on the eastern side of town and Route 11 from the Exit 7 Interchange to the downtown have been designated scenic byways as a result of the Connecticut River Scenic Byway feasibility study that was completed in 1997. The Connecticut River Scenic Byway corridor includes roads on both sides of the Connecticut River from Massachusetts to northern Vermont and New Hampshire. State designation of scenic byways allows towns access to funds for protection and enhancement of resources along the named roads. Scenic views along these and other scenic roads should be identified and protected in order to maintain the scenic nature of these roads and the rural character of the town. Local scenic roads, such as Eureka Road, Highland Road, Cherry Hill Road, and Elm Hill Road should be identified as scenic on the Future Land Use Map and managed for their scenic qualities.

## **Alternative Forms of Transportation**

### **Public Transit**

Connecticut River Transit, which recently replaced Town and Village Bus, serves the Town of Springfield with in-town services and connecting service to Chester, Bellows Falls, Ludlow, Okemo Mountain, as well as Lebanon, Dartmouth College and Dartmouth Hitchcock Medical

Center.

Connecticut River Transit also provides van service to the elderly and disabled for medical appointments, shopping, personal trips, Adult Day program and to the Senior Center. This can be arranged by the rider by calling 24 hours ahead of time to make the arrangements.

### **Vermont Transit**

Vermont Transit has existing facilities in the Springfield Plaza for ticket sales. The Vermont Transit bus provides convenient service from Springfield to Rutland, Burlington, Montpelier, White River Jct and points in between, as well as transit to more distant cities, such as Boston, MA. There is, however, no terminal or shelter for waiting passengers.

### **Park and Ride**

Park-and-ride lots are effective in reducing single-occupant vehicle use when they are located along routes that are used by the majority of commuters in a given area, and combined with stops by the local and inter-community public transit providers. The 1995 Regional Transportation Plan used 1990 Census data to evaluate the commuting patterns in the Region. According to the study ride-sharing and the use of park-and-ride lots is most likely to be utilized when commuters are traveling longer distances and the potential financial savings are greater. Therefore, external commuting patterns (those trips with destinations outside the Region) were given the greatest weight in determining locations for effective park-and-ride facilities.

Springfield is one of three towns in the Region, which are major sources of persons commuting out of the area for work in, most commonly, Claremont, NH; Lebanon, NH; Rockingham, VT; Hanover, NH; Woodstock, VT; Hartford, VT; and Rutland, VT.

A survey of park-and-ride users, taken by the Southern Windsor County Region Planning Commission at the Ascutney facility in August and September of 1999, showed the majority of the park-and-ride users arrived alone at the lot and then left with one other person. Sixty-one percent of respondents were bound for the White River Junction/ Hanover/ Lebanon area and just under 44 percent began their trip from Weathersfield.

As a major starting point for commuters out of the area, Springfield should look into a park-and-ride lot. As the Interchange area is easily accessible to the greatest number of commuters, a park-and-ride facility at the intersection of VT Route 11 and I-91 is needed. Plans to accommodate the facility in the interchange area should be proposed and promoted by the Town. The cooperation of Town and Village Bus to schedule stops at such a facility, as well as the promotion of the use of ride-share programs at the facility, is encouraged.

### **Bike and Pedestrian Facilities**

The Toonerville Trail bike and pedestrian facility which runs from the Connecticut River to the Nortrax property on Clinton Street, is the first of three stages of a bike and pedestrian way through the Town of Springfield. Eventually, the path will connect the Connecticut River in the southeast to North Springfield in the northwest, and then continue on to the Chester town line. The next portion of this path, now in the discussion stage, is from the Nortrax\_ property to the State Building on Mineral Street. Non-motorized, vehicular access from one end of town to the other is a priority.

There are plans for a pedestrian walk, referred to as the Springfield Riverwalk, to be constructed in the existing parking space between Main Street and the Black River, easterly of the foot bridge to the Fellows plant. This will accommodate pedestrians, provide parking, and be fully landscaped to make an appealing park at the river's edge. Access Management techniques are incorporated to greatly reduce the access points and turning movements from Main Street to this popular parking spot.

Pedestrian access to most of Springfield via sidewalks is excellent, but the condition of concrete and paved sidewalks is not universally good. A plan for maintaining and improving sidewalks was completed in 2002 by Dufresne and Associates. Conclusions of this plan should be incorporated in a comprehensive Capital Budget and Program for the Town.

### **Rail Service**

The convenience and efficiency brought to the trucking community by the construction of I-91 ended the need for rail transportation for the movement of most goods. Though rail service is no longer available in Springfield, the New England Railroad (NER) maintains freight lines across the Connecticut River in Charlestown, NH. Amtrak service is available in Bellows Falls and Windsor, VT. Green Mountain Railroad freight service, which runs between Bellows Falls and Rutland, VT along the VT Route 103 corridor, is available at its terminus and interface with NER in Bellows Falls, and could be accessed in Chester and Gassetts, VT.

### **Hartness Airport**

Facilities at Hartness State Airport are among the best in Vermont. Built in the 1920s, Hartness was host to Charles A. Lindbergh shortly after his Trans-Atlantic Flight in 1927. Hartness is the home of the first Vermont Civil Air Patrol Squadron, founded in 1941, and once had regularly scheduled airline service. The airport's primary runway, Runway 5/23, at 5,498 feet, is, after Burlington International, the second longest runway in the state. Hartness is served by a crosswind runway, Runway 11/19 of 3000 feet. The airport accommodates corporate jets.

VTrans, Maintenance and Aviation Division has a Capital Improvement Program, which has recently spent more than \$2 Million for the refurbishing of the runways at Hartness, and has in excess of \$1.3 Million of capital improvements earmarked for Hartness over the next 5 years. Plans also include marketing to jet charters (business, tourism and ski enthusiasts), providing pads for the construction of more private hangars, and card-lock fuel available 24 hours a day. State and federal funding, a 10/90 match, is prioritized among the ten airports based on points awarded for meeting various criteria. One of those criteria is the existence of an Airport Zone in local zoning regulations. Springfield should consider such a zone for the benefit of the town and the airport.

There are approximately 30 mostly small, single-engine and a few twin-engine aircraft based at the Hartness Airport. Several local businesses have customers or suppliers that use general aviation and Hartness to reach them on a regular basis, especially for precision machined parts to keep out-of-state assembly lines supplied. Those knowledgeable of the airport operations state that as much as 50% of the annual flight operations are business related. The airport is also used by many second home owners who fly between Vermont and their primary residence on a regular basis.

The airport supports medical emergency flights (both helicopter and fixed wing), on-call organ transplant flights, state police drug enforcement operations, Springfield Police operations, Air National Guard helicopter operations, search and rescue operation of the Civil Air Patrol and state police. Soaring clubs operate at the airport all summer, and host an annual soaring competition. The facility is used for various community sponsored events. In addition, aviation fuel, including jet fuel, air mechanic services, and flight school are available.

In 2002, the VTrans Aviation Council contracted for an economic impact study for all of its airports, including Hartness. In addition to mentioning the airport's use for businesses and second home owners, the report lists additional benefits that the airport provides in the form of events. The airport hosts the International Aerobatic Conference twice a year, and the Town holds its July celebration at the airport.

The airport has seen fluctuating periods of usage over the years. It remains one of the best aviation facilities in Vermont for the movement of goods and people. Though it is not utilized to its full capacity, it remains a significant economic asset for Springfield.

### **Access Management**

Highways perform the dual function of enabling mobility for regional public transit, truck and automobile traffic, and providing access to adjacent land uses. As traffic volumes grow and adjoining land is developed, there is a natural conflict between these two transportation objectives.

The goal of access management is to continue or generate a safe and efficient flow of traffic along a roadway while preserving reasonable access, and therefore land use, to abutting properties. Achieving this goal requires a careful balancing act in the application of access design standards and regulations.

The need for better access management is most obvious in strip commercial areas. If there are too many driveways, drivers can be confused about the turning movements into and out of the many access points. Where there are no turn lanes, each turning vehicle slows traffic and reduces the carrying capacity of the road. By managing access to the highway system during project planning stages, safe access can be provided while preserving traffic flow. Unfortunately, once an access management problem is obvious, it is often too late to correct.

Access management can benefit properties in all communities and along all types of roads. Its principles have been a part of roadway design for many years. Freeways function to move large volumes of traffic at high speeds for long distances because access is limited. In contrast, residential streets function primarily to provide access to homes and low speeds. The key to effective access management is linking appropriate access design to roadway function. Successful access management protects and enhances property values and potential land use, while preserving the public investment in our roads.

Access management is a cooperative effort on the part of local zoning and planning agencies and VTrans, which has defined the process and set forth guidelines in its "Access Management Program Guidelines" July 1, 1999, Revised July 17, 2000.

Sections of highways in the Town where access management principles should be carefully

considered in future land use decisions and applied to the project are:

- Clinton Street (Route 11) between South Street and the Interstate;
- Chester Road (Route 11) from Route 106 to Snide Road in North Springfield;
- Main Street (Route 11) from Elm Hill Road to North Main Street;
- River Road (VT Route 106) from Main Street (VT Route 11) to its intersection with VT Route 10.

It is in these areas of the town where access management guidelines can reduce driver confusion and the number of turning movements made. Access management can also preserve the functional capacity of the road, maintain travel efficiency and related economic prosperity, and ensure the safety of roadways for motor vehicle users, bicyclists and pedestrians. Of particular concern in these areas are the parking lots with open curb lines and no set access points (e.g. Main Street between Elm Hill Rd and North Main Street as it now exists before “Riverwalk”), as well as the need to connect existing parking to allow access to many sites from the same access point without the necessity of entering and exiting the highway (e.g., several River Street parcels have provided such a connection, but there are several examples in this same area where the parking lots could, but do not, connect.) On Clinton Street, preservation of the “frontage road” at the Jones and Lamson plant, encouraging the sharing of access points, and discouraging new access points along this street would further the objectives of Access Management.

## **Goals**

1. Improve the safety and levels of service on the main road through the downtown.
2. Ensure that intersections are safe and efficient for the movement of traffic.
3. Limit the number of access points on major roadways to improve safety and reduce sprawl.
4. Ensure that alternative modes of transit of persons and goods are included in design, maintenance, and reconstruction of town and state highways and in land use abutting these highways.
5. Develop a plan for parking in the downtown that will accommodate the needs of downtown businesses and residences.
6. Improve traffic flow through downtown Springfield.
7. Encourage increased use of public transportation and ride sharing.
8. Develop a traffic-counting schedule to collect accurate data on a regular basis.
9. Enhance the facilities at Hartness State Airport and encourage additional usage of these facilities.
10. Continue to participate in regional transportation planning efforts through participation in the Transportation Advisory Committee of the Southern Windsor County Regional Planning Commission.
11. Identify and protect scenic roads to maintain the rural character of the town.

12. Prioritize transportation needs so that most important problems and issues are addressed early.

## **Objectives**

1. Review the traffic impact of development proposals including the impact on the level of service of affected intersections. Development proposals should not cause undue congestion or delay at intersections. A minimum Level of Service Rating "D" should be maintained at all intersections.
2. Ensure that access management principles are applied to new use and development of parcels abutting town and state highways.
3. Monitor the present level of congestion at intersections of concern (including Route 106/11, Main Street/Park Street/Summer Hill, Clinton/South Street, and the Southeastern Correctional Facility and Route 11).
  - Route 106/11: At a minimum, the State should be encouraged to investigate the realignment of this intersection. The timing of this signal should be optimized for peak hour traffic volume and the light at the entrance to the plaza should be coordinated so that traffic can move smoothly through both intersection.
  - Main Street/Park Street/Summer Street: This signal could function with less congestion if the timing were optimized for the peak hour traffic volume.
  - Clinton Street/South Street: This intersection is very confusing. Before taking any action this intersection should be surveyed for the peak hour traffic volume and the directionality of traffic so that the correct alignment and light timing can be installed. Improvements considered for this intersection could include:
    - a. reconstructed and realigned into a standard three-way intersection;
    - b. repave the intersection;
    - c. consider removing the blinking light and replacing it with a STOP sign or make the signal fully operational;
    - d. other geometric alterations such as "round about" arrangements.
4. Gather information on parking lot use, customer preference on parking location, and maximum walking distance recommended for different uses. Springfield should consider establishing a Parking and Transportation Board consisting of merchants, town employees, and citizens to study and monitor this situation. Then only if additional parking is proven to be warranted should the town consider constructing more parking. The necessity and location of all on-street parking should be carefully analyzed.
5. Collect data and evaluate capacity needs for roadways through conducting traffic counts on local roads, turning movements at main intersections, and parking usage at the municipal lots. For areas that are in need of improvement, low cost improvements such as signing and pavement marking should be evaluated as well as more drastic options such as geometric changes, rotary arrangements and signalization.
6. Support Connecticut River Valley Transit in its applications for funding to support its in-

town public transit system in Springfield with inter-town connections. Ridership should be closely monitored to determine whether or not the system serves residents' needs for access to medical services, shopping, recreation, and employment.

7. Continue to upgrade the computerized database which evaluates road maintenance needs based on the municipal road construction standards, municipal road maintenance methods, and municipal road maintenance priorities.
8. Maintain and utilize a yearly construction schedule providing for improvement of the town's entire road network.
9. Expand the Toonerville Trail to North Springfield through innovative funding sources. This path preserves a portion of the former railway right-of-way for the future if rail service were to be restored to this Town.
10. Work with the Agency of Transportation to install a new sign on I-91, south of Exit 7 along the northbound lane. Some suggestions are: Signs with phrases like: For Central Vermont Ski Areas Use Exit 7 or For Killington and Okemo Ski Areas Use Exit 7, and Improvement of the To I-91 signage at Gassetts to encourage southbound traffic to use Routes 10, 106 and 11 to access the Interstate.
11. Support the Airport Commission's efforts to maximize and expand the use of the facility.
12. Create an Airport Zone, which will increase the potential for state and federal funding at the airport.
13. Review development proposals along Route 5 and other roads designated as scenic to ensure the scenic quality of the roadside and views from the road are not significantly impacted.
14. Changes to scenic roads, including filling, grading, re-alignment, and tree removal should be accomplished in a manner that does not degrade the scenic quality of the road or roadside. Bicycle and pedestrian paths should be treated as scenic roads.
15. Any plan to improve the flow of vehicles should not adversely affect reasonable and safe use by pedestrians and non-motorized vehicles.

## Chapter 9 — Energy

Historically Springfield had one natural asset which distinguished it from many communities, substantial water power. While not large compared with Bellows Falls, it was a valuable source of energy, especially in a community where the alternate source, coal, arrived with a six mile team haul as the final part of an already too long journey. The water power in the village totaled in availability about 700 horsepower, of which a maximum of about 350 horsepower was developed at eight dam sites.

The plants were all “run of the river;” that is, there was no substantial storage behind any of the dams. They delivered little power in times of drought; and were generally inoperable in time of flood, because the high water in the tail races — the lower side of the dam — drowned out the head. As what would now be called firm power they were worthless, never the less in the days of high cost thermal power and before electric transmission lines these dams were a real catalyst for industrial establishment. In 1970 none of the plants were operating and most of them had been dismantled.

The rising cost of sufficient energy to maintain a viable community has led to efforts to conserve existing energy resources and to search for alternative solutions to energy problems. The Town of Springfield is meeting these challenges with policies and strategies for greater energy efficiency.

### Electric Power

Central Vermont Public Service Corporation and Green Mountain Power provide electricity to Springfield. Springfield was built because of the abundant water and the falls of the Black River. Most of the dams along the Black River were abandoned in favor of cheap electric power. During energy crisis, however, revitalization of the dams became an issue, first to the Town and then for Central Vermont Public Service and Westinghouse. Four dams are once more producing power for sale: Fellows Dam, Comtu Falls, Slack Dam, and the Lovejoy Dam. CVPS has a total of four stations in Springfield, serving all of the households that have electric power. The number of households not served by electric power (“off the grid”) is unknown. (Refer to the Base Features Map for detail of transmission lines.)

The dams that are currently in operation produce power that is sold to CVPS and then is sold back to customers. If local industries could directly access and use or store hydroelectric power, it would make this power source a far more efficient and profitable one for the Town. Proposals for re-licensing of hydroelectric generators should consider local uses of the power generated as well as environmental factors such as fish passage.

### Alternative Energy Resources

Like most of the electric power that is available to Springfield residents, fuel oil, gasoline and propane must be imported from other places. Wood is another source of fuel for heat and may be harvested from forests in town as well as from nearby towns. It is the goal of the Town to conserve these resources and to promote alternative energy resources.

The Sustainable Valley Group is a Springfield-based organization whose mission is “to promote the generation and implementation of ideas to bring about a financially and environmentally sustainable economy.” The main focus of the group is to promote sustainable technologies such as biodiesel and other sources of alternative energy and green technology. One goal of the Southern Windsor County Strategic Economic Development Plan (see Economic Development Chapter) is to develop an incubator for businesses that are pursuing renewable energy and other sustainable technologies.

Wind and solar power are potential alternative sources for generating electricity. Building location and design are very important for taking advantage of these resources. Installation of insulation and weather-tight windows and doors and highly efficient appliances can dramatically reduce the amount of conventional fuels needed and/or ensure efficiency of alternative sources of energy. Passive solar energy and solar cells that generate electricity generally are most effective in southern and western exposures. Passive solar energy makes immediate use of the sun’s light and heat through windows and skylights, while solar cells store energy in batteries and convert it to electricity for later use.

Wind is an excellent alternative source of energy for providing electric power to homes, under the right conditions. Wind generators must be mounted on towers above treeline and need an average wind speed of nine miles per hour (mph). Better conditions can require shorter towers and smaller turbines, creating less of an impact on scenic views. In more remote locations, the impact caused by wind towers should be weighed against that caused by the clearing that extension of power lines would require. Any new infrastructure required for generation or transmission of electric power should be sited so that it takes advantage of renewable resources with the least possible negative impact on natural and scenic resources.

## **Energy Conservation and Efficiency**

The Town of Springfield should take the initiative in promoting energy efficiency. The use of energy in Town buildings can be reduced through such cost-effective measures as weatherization and energy efficient heating sources to reduce oil dependency, efficient lighting of public buildings and parking areas and, where feasible, the use of alternative energy efficient resources. An energy audit should be made to determine specific energy conservation measures to improve efficiency in town buildings.

In 2000, Efficiency Vermont contracted with the Vermont Public Service Board to become the State’s first energy efficiency utility. The utility provides technical assistance to businesses, builders, and homeowners and operates an incentives program available to commercial, industrial, agricultural and institutional electric service customers.

Measures to achieve reduction in energy demand in residential areas include the use of cost-efficient alternative energy resources, including renewable resources, for both new homes and additions/renovation of existing homes; the construction of energy efficient new homes; increasing public awareness among town residents of the link between cost savings potential and the practice of energy conservation and the use of alternative energy resources. Currently, Act 250 requires an energy efficiency element for all projects that come under environmental review.

The Town should examine the potential for providing incentives or tax credits for energy efficiency in residential development. Architects and builders should be encouraged to examine alternative energy resources in the design and construction phases of residential development. Where feasible, the placing of residential units should maximize the energy benefits to be gained and should take advantage of existing infrastructure.

## **Transportation and Energy Use**

According to the 1991 Vermont Comprehensive Energy Plan, energy use in the home and for transportation are projected to account for the greatest anticipated demand over the next 20 years for motor fuels and heating oil. Along with residential consumption energy use for transportation is anticipated to account for the greatest demand over the next 20 years.

Efforts to reduce transportation demand should focus on reducing single passenger transportation, reducing the costs in infrastructure development for the construction and maintenance of the town road network, maintaining public vehicles and roads, and public education. In an effort to minimize energy costs the expansion of roads should be limited and public vehicle maintenance should be cost effective and maximize efficiency. In addition, the Town should promote the use of energy efficient vehicles, assist and encourage car and van pool programs, and investigate the feasibility of additional commuter lots.

Energy consumption can also be reduced by promoting the potential for pedestrian and non-motorized traffic through the development of pedestrian walkways, the location of goods and services in close proximity to higher density residential areas, and the development of bikeways and greenways.

## **Energy and Land Use Patterns**

When land use patterns do not relate to existing infrastructure and development, energy can be lost through excessive transportation distances and unnecessary expansion or extension of facilities and systems. Wherever possible, development should be concentrated in order to reduce the costliness of dispersing energy over large geographic areas. The location of community service structures, retail sites, public utilities, day care centers, State and municipal offices, and other frequently visited sites should be encouraged within walking distance of residential areas. In addition, the design and location of new roads and other utilities should be located, when feasible, to coincide with existing and recommended land use patterns as set forth in this document.

## **Goals**

1. Encourage citizen participation in energy planning and implementation.
2. Increase the usage of locally grown fuel wood (as compared to that which is imported from other towns) wherever possible in order to improve the local economy and conserve resources.
3. Promote enrollment of working forests into the Current Use program in order to promote local production of fuel wood and other forest products, foster good forest management, and ensure the availability of these resources for future generations.

4. Increase the use of renewable resources for heating and electricity in municipal, commercial, and residential buildings.
5. Promote energy awareness and education.
6. Support the development of renewable energy technologies in Springfield.
7. Reduce energy consumption in town facilities.
8. Reduce transportation energy consumption.
9. Encourage non-motorized vehicles and pedestrian traffic.
10. Encourage energy efficient residential development.
11. Promote efficient delivery of energy services.
12. Promote compatibility between land use, energy delivery and consumption.
13. Encourage land use patterns that promote the most efficient use of energy.

## **Objectives**

1. Develop a directory of local fuel wood providers and educate residents about the benefits to buying wood locally. In conjunction, the Town should review the potential for using the wood gasification process as an alternative municipal energy source.
2. Promoting this program will help to stimulate fuel wood production and improve forest management.
3. Where feasible, the development of renewable energy resources such as woodlands, solar energy devices, hydro generators, and wind should be encouraged. An investigation of the potential for additional dam sites and the possibility of developing hydroelectric power would identify an additional renewable energy resource.
4. Provide informational material and promotion of the use of solar and wind energy resources. Increase awareness among town residents by providing information concerning alternate resources and methods of reducing energy consumption in the home (such as weatherization and upgrading to energy efficient appliances).
5. Conduct an energy audit to determine specific energy conservation measures to improve efficiency in town buildings. Evaluate the suggested energy improvements for cost effectiveness.
6. Promote the use of energy efficient vehicles, assist and encourage car and van pool programs, and investigate the feasibility of additional commuter lots.
7. Maintain public vehicles and roads, and educate residents about the importance of maintaining their own vehicles. In an effort to minimize energy costs the expansion of roads should be limited and public vehicle maintenance should be cost effective and maximize efficiency.

8. Promote the potential for pedestrian and non-motorized traffic through the development of pedestrian walkways, the location of goods and services in close proximity to higher density residential areas, and the development of bikeways and greenways.
9. The town can encourage less driving through the development and/or maintenance of an interconnected system of sidewalks and walking/bicycle trails, linking residents to schools, stores, work and home.
10. Encourage the use of cost-efficient alternative energy resources, including renewable resources, for both new homes and additions/renovation of existing homes.
11. Encourage the construction of energy efficient new homes.
12. Increase public awareness among town residents of the link between cost savings potential and the practice of energy conservation and the use of alternative energy resources.
13. Examine the potential for providing incentives or tax credits for energy efficiency in residential development.
14. Architects and builders should be encouraged to examine alternative energy resources in the design and construction phases of residential development.
15. Where feasible, the placing of residential units should maximize the energy benefits to be gained and should take advantage of existing infrastructure.
16. The town should ensure that proposed construction of additional transmission or distribution lines within Springfield are in the best interest of the Town's citizens. Such construction should take natural and scenic resources into account and should not adversely impact fragile soils.
17. Encourage the concentration of energy intensive facilities, housing, and other uses to reduce the costliness of dispersing energy over large geographic areas.
18. The location of community service structures, retail sites, public utilities, day care centers, State and municipal offices, and other frequently visited sites should be encouraged within walking distance of residential areas.
19. New roads and other utilities should be located, when feasible, to coincide with existing and recommended land use patterns as set forth in this document.

# Chapter 11 — Land Use

Transportation routes and industry have long been the drivers of land use change in Springfield. The founding of Fort #4 in Charlestown, New Hampshire and the construction of the Crown Point Road brought early settlements along the Crown Point Road and to Eureka and Spencer Hollow. In the early century, Isaac Fisher changed that pattern by building mills and the first machine shop on the Black River falls. Current land use patterns reflect the outgrowth of the early industrial era, with older industrial buildings, business and housing in the valley, and farm sites on the surrounding hills, although the increased use of automobile transportation has also brought commercial and residential development along main transportation routes.

Major transportation routes developed along the Connecticut and Black River valleys, first in the form of railroads, then roads and highways, and finally the Interstate system. This encouraged further development of the Black River valley. Today, a visitor to Springfield driving along Routes 11 and 106 gets the impression that Springfield is pretty well built-up, with a mixture of industrial, commercial, and residential uses (much like many places in New England). The visitor does not see that most of the town is still rural, with scattered housing, fields, woods, and scenic views. Driving along I-91 and Route 5, one sees this rural aspect of Springfield, with views of the Connecticut River, Spencer Hollow, and Skitchewaog Mountain.

## Recent Land Use Trends

The land use changes that have occurred in Springfield over the last decade have primarily been a result of a changing economy. Over one million square feet of vacant industrial space remains after plant closings that began in the late 1980s and continued through 2002. These large vacant or underused industrial buildings impact their surrounding neighborhoods. Once the economic generators of the community, they have become economic detractors. It has become a priority for the Town to redevelop these properties and bring life back into the downtown and the gateway to Springfield.

The construction of the Southeastern Vermont Correctional Facility near the Exit 7 interchange and the extension of water and sewer to the site was another major change that occurred since the last Town Plan was adopted. In the interim, the Planning Commission adopted changes to the Town Plan and Zoning Bylaws in order to prevent sprawl along the new utility corridor and to address concerns in the interchange area. These issues have been elaborated upon in this new Town Plan.

The over-reliance on cars and the availability of land on major roads outside the downtown have lead to a sprawling development pattern in some parts of Springfield. This “spreading out” of commercial areas is often referred to in negative terms such as “strip development” or “sprawl.” The low cost of land and high traffic volumes that lead to this type of development create negative impacts on the more centralized commercial areas and detract from the traditional character of the community.

According to the Vermont Forum on Sprawl, “Sprawl is dispersed, auto-dependent development outside of compact urban and village centers along highways and in rural countryside.”

### Figure 11.1 – Characteristics of sprawl from the Vermont Forum on Sprawl

**Sprawl is typically characterized by...**

- Excessive land consumption
- Low densities in comparison with older centers
- Lack of choice in ways to travel
- Fragmented open space, wide gaps between development and a scattered appearance
- Lack of choice in housing types and prices
- Separation of uses into distinct areas
- Repetitive one story development
- Commercial buildings surrounded by acres of parking
- Lack of public spaces and community centers

Careful attention to directing future patterns of growth will help to reduce the negative impacts that the existing sprawl and strip development has had on the town.

**Existing Settlement Patterns**

The Land Use/Land Cover map in the Appendix shows the existing land use patterns by breaking down different uses (residential, commercial, industrial, etc.) and land covers (transitional/shrub, forest cover, surface water, etc.). By examining current land use patterns, important natural and scenic resource areas (on the Natural Resources map), the Town can make decisions about what kind of land use patterns it would like to see in the future to preserve the qualities that make Springfield an inviting place to live and work.

**Commercial/Retail Areas**

Although some new stores have opened or expanded in the downtown in recent years, there is still some vacant commercial space in both the downtown and the plaza. Strip development has occurred on Route 11 (Clinton Street) between the Jones & Lamson complex and the downtown, and on much of Route 106 (River Street) between McDonald's and North Springfield. While, in the past, there was an emphasis on developing these outlying areas, the Town has developed a renewed interest in the downtown. In order to draw shoppers from surrounding communities, the downtown must have an attractive and diverse mix of businesses. Those businesses that cannot locate in the downtown should share access points and parking with neighboring establishments wherever possible, and should be accessible by alternate forms of transportation.

**Commercial Development in Residential Neighborhoods**

Areas served by infrastructure are attractive to commercial and industrial interests as well as higher density residential development. In some neighborhoods, commercial and industrial development can be harmful to the quality of life and character of the neighborhoods. While home occupations and small commercial establishments that serve residential areas should be encouraged, steps should be taken to continue to prohibit larger commercial or industrial development in residential neighborhoods.

**Vacant Industrial Property**

The evolution of Springfield's industry has had a significant effect on the land use patterns that exist today. Springfield's booming precision machine tool industry began in the center of town and next to the Black River, the major source of power in the earliest days of the industry. The development of the North Springfield Industrial Park in the mid-1970's created space for new businesses to move into town when the downtown industrial buildings were full to capacity. With the downturn of the machine tool industry that began in the late 1980's and continued into the 2000's, businesses closed or moved out of town leaving large vacant buildings behind. Many of these properties have remained vacant or underused for years due to real or suspected contamination from former industrial uses, or due to the changing economy and need for greater diversity of smaller companies in smaller spaces.

The Town's priority is to fill existing industrial space in the North Springfield Industrial Park and to revitalize former industrial properties in the downtown and on Clinton Street. Those properties on Clinton Street and in the downtown would be best suited for light, clean industrial or mixed use development. Retail uses should be encouraged in downtown properties and in the plaza, but should be more limited on Clinton Street. Revitalization of dilapidated buildings in the downtown is also a priority.

Land in the vicinity of the new Correctional Facility has been set aside for industrial development. This area is ideal for industrial uses that require a lot of trucks and quick access to the Interstate.

### **Historic and Archeological Resources**

Springfield is noted as the home of many industrial and mechanical inventions and has a legacy of associated structures and sites. The downtown has many historic buildings whose enhancement would improve the downtown image and, subsequently, promote economic development and revitalization. Other historic resources which merit protection through inventory or designation as historic districts or resources include the Parker Hill neighborhood and the Crown Point Military Road. The latter is also an important recreational resource. Review, renovation, and protection of historic resources should be a priority in reviewing plans for construction or reconstruction in historic areas. The Town may wish to consider the formation of a Historic Preservation Commission or incorporate the functions of such an organization within an existing organization. The Town should investigate the feasibility of being designated a Certified Local Government in order to protect historic resources and access funding for this purpose.

All of the undisturbed lands along the Connecticut River, the Black River, and in the French Meadows area have high potential for archaeological sites. Historic sites and structures are also, almost by definition, archaeological sites. An important land use issue is to achieve the conservation of significant archaeological resources while still promoting prudent development.

### **Natural Sites and Resources**

The Land Use/Land Cover map demonstrates that much of Springfield's land cover consists of forest lands and open fields. The Natural Resources maps show areas that the State has determined are important wildlife habitat (deer wintering areas and sites where threatened or endangered species have been identified), wetlands, and surface waters. Many of these resources represent an important element of what makes Springfield an attractive place to live and work.

Springfield has made efforts to protect important natural areas by adopting a Riverfront Protection Overlay Districts for land adjacent to the Connecticut River and the mouth of the Black River. There is also significant interest in promoting similar protections along the rest of the Black River and promoting its scenic and recreational values. Skitchewaug Mountain is a scenic resource that may be viewed from many locations in town. These scenic qualities should be protected. Access to the either the Black or Connecticut River is currently limited or nonexistent. The North Springfield Bog remains a significant natural resource area that should be accessed only for educational or passive recreational purposes. (See Natural Resources chapter for further discussion).

### **Agricultural and Forest Land**

In spite of the hilly terrain, there is much agricultural land in town. Once the largest land cover in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, agricultural lands are now primarily located along the Connecticut River and in a few hilltop neighborhoods. Agricultural lands along the Connecticut River have been protected by the adoption of the Riverfront Protection Overlay District in addition to the Land Reserve 25-acre minimum zoning districts. The agricultural land along the Connecticut River is especially important for archaeological, historic, agricultural, flood control, water quality and aesthetic reasons. The remaining agricultural portions of this area have been in agricultural use since the late 1700s.

The majority of Springfield’s landscape is now forested. The combination of forested areas and open fields lend to Springfield’s rural landscape that may be found outside of the downtown.

### **Public and Semi-public Land**

Springfield contains public lands in the form of municipal and state properties. There are town parks, recreation facilities, municipal forests, a Department of Fish and Wildlife Access area, as well as other resources. There are also semi-public lands (e.g., YMCA camp). Private property can have the characteristics of semi-public or public land. The shopping plaza and the downtown, by their nature, are semi-public or public space. The land use map has these public and semi-public lands marked on it.

Future development and land use on or adjacent to public or semi-public land should be compatible with existing uses. Future development and land use should also encourage access to and use of public lands, and ensure that any development adjacent to public and semi-public lands will not unreasonably affect these lands.

## **Future Directions**

### **Smart Growth**

The term “Smart Growth” has been used by planners for the last several years to refer to planning strategies that have been in effect for decades. More recently, the Vermont Forum on Sprawl has developed a number of principles for Smart Growth as it is applied in the rural Vermont landscape. These principles are as follows:

**Figure 11.2 – Vermont Forum on Sprawl Smart Growth Principles**

- |  |
|--|
| <ol style="list-style-type: none"><li>1. Plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.</li><li>2. Promote the health and vitality of Vermont communities through economic and residential growth</li></ol> |
|--|

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 growing most rapidly.
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 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.

With these principles in mind, there are a number of actions that Springfield can take to plan for future growth. The investment and placement of public services such as water and sewer lines, utility lines, roads, and public buildings can be particularly influential on where private development will be located in the future. Public investment in parks, schools, libraries, museums, water and sewer service, roads and utility lines, should be wisely planned and strategically placed to occur in areas where growth is desirable.

### **Growth Centers**

Designating growth centers is one method of directing growth. The Vermont Planners Association (VPA), defines a growth center as *“one (or more) area(s) of a community designated by that municipality in its Municipal Plan(s), and/or designated by the Regional Planning Commission in its Regional Plan, to accommodate a significant amount of the growth anticipated by the municipality over the next twenty years, and which is a distinct, centrally oriented organization of uses, densities, circulation, structures, and other elements.”*

State agencies have begun to use the growth center concept in many of their funding decisions. The Municipal Pollution Control Priority System Rule establishes criteria for funding of wastewater treatment facilities through the Vermont Agency of Natural Resources. Amendments in 2001 require that, in order to be eligible for funding, proposed projects must only serve locally designated growth centers unless there are severe health and environmental problems located outside of a community’s growth center(s). If the latter is the case, or if sewer lines serving growth centers must be located outside of the designated growth center, the municipality must demonstrate that the impacts of growth resulting from the infrastructure can be adequately managed, and that scattered or strip development will not result from the state’s investment in the community.

The State’s Downtown Program, developed in 1998, prioritizes funding for projects in “designated downtowns” and designated “village centers.” While the boundaries of a growth center are likely to extend beyond the boundaries of a designated downtown, this program has

encouraged communities to prioritize development and revitalization of higher density downtowns before considering public investment outside of these areas. Springfield's downtown area became a "designated downtown" in 2000.

In Springfield, areas where growth is encouraged include the following:

- **Downtown** — Springfield's downtown consists of very concentrated development, but lacks areas for parking and open space such as parks. Several parking studies have been completed that lay out possible solutions to Springfield's parking issues (see Transportation chapter). Additional efforts could be made to resolve parking issues for residences on the upper floors of downtown buildings. Existing structures that are dilapidated or underused should be priorities for removal or investment of public funds for redevelopment and revitalization. A mix of retail establishments should be promoted to create a vibrant downtown that is attractive to residents and visitors. The Springfield Circulation and Streetscape Plan (1995) identified specific areas where parking lots could be reconfigured or additional parking added to accommodate the businesses in the downtown.
- **Clinton Street former industrial area** — The existing infrastructure and structures on Clinton Street south of the downtown make this area a logical expansion of the downtown or a separate growth area. This area should allow a mix of uses, including concentrated housing, commercial, and light or clean industrial development. A planning study that looks at alternatives for various uses, layout of structures and landscaping is encouraged for the former industrial properties on Clinton Street. The challenge the town is faced with is how to promote development in this area that will not have a negative impact on the downtown.
- **North Springfield Industrial Park** — The North Springfield Industrial Park was developed for industrial uses and should continue to focus primarily on industrial uses. The priority for growth in this area is the reuse of existing structures for industrial purposes. Large truck access in this area is a problem because of the small residential streets leading to the industrial area. Therefore, uses that do not require large truck access are preferred in this area.
- **North Springfield** — The village of North Springfield has easy access to water and sewer and would be a logical growth area for higher density housing and commercial establishments that serve residential areas. The Town should delineate boundaries the area that is most suited for higher density use so as to reduce the potential for strip development between downtown Springfield and North Springfield.
- **"Springfield East" Industrial Park** — An area has been set aside for industrial development next to the Southeast Vermont Correctional Facility. This area has quick access to Interstate 91, and is therefore suited for industry with large volumes of trucks.
- **River Street** — This area is zoned for commercial use, and is one of the few areas that has land open for commercial development. In order to make this area an enhancement to Springfield's commercial mix, access management policies and design standards should be adopted for the corridor.

## **Access Management**

Access management policies can help to alleviate the pattern of strip development that is beginning in Springfield along some of the major roadways. Numerous curb cuts can cause dangerous traffic conditions. Shared driveways and parking, adequate provision for pedestrian and non-motorized vehicle access, and parking behind buildings wherever possible would contribute to more desirable development. Long-term planning and monitoring of these developments should be encouraged to ensure adequate traffic flow and concentration of economic activity.

Access management policies should be adopted for the following areas:

- Route 11, from the Exit 7 interchange to downtown
- Route 106 (River Street) between downtown and North Springfield
- Route 11 west of the Plaza

## **Design and Site Plan Review**

In areas where strip development has already occurred, or where existing structures create a “gateway” to the community (on Clinton Street, for example), design guidelines and/or site plan review procedures could encourage better landscaping, screening, lighting, and site layout. Good design standards could also encourage buildings that are of similar scale and character to existing historic structures. Existing and proposed development along Clinton Street and River Street could benefit from such guidelines, as well as a review of allowed uses. There is currently an overabundance of used car lots in both corridors.

Design standards developed by the Vermont Forum on Sprawl are appropriate for Springfield, especially in consideration of the existing development constraints. These design standards include such things as: reduced building setbacks from the road with parking behind the buildings, clustering buildings around common access roads, reducing the number of access roads, consideration of appropriate scale of buildings in relation to nearby structures, and providing appropriate signs and visual buffers. This information may be found in *Growing Smarter: Best Site Planning for Residential, Commercial and Industrial Development*, published by the Vermont Forum on Sprawl (2001).

Areas that would particularly benefit from such expanded site plan review as well as Access Management include:

- Clinton Street (Route 11) between South Street and the Interstate;
- Chester Road (Route 11) from Route 106 to Snide Road in North Springfield;
- Main Street (Route 11) from Elm Hill Road to North Main Street;
- River Road (VT Route 106) from Main Street (VT Route 11) to its intersection with VT Route 10.

## **Access to and Protection of the Black and Connecticut Rivers**

The Black River is a key natural, scenic and cultural resource for Springfield. Historically, it was used for power; now that use has declined, the river still has important land use functions. The

river's shorelines and access should be enhanced to improve aesthetics and promote economic development. While this Town Plan does not recommend specific development for these areas, attention should be given to improving the quality of existing land use, planning for stormwater runoff, and incorporating buffers in site plans in the river corridor in order to grow without compromising water quality. Existing development such as the Springfield Plaza and former industrial buildings along the river should, to the greatest extent possible, be improved to capitalize on the river's resource potential.

In addition to looking at feasible uses for the former industrial property on Clinton Street, future plans should consider how best to capitalize on the Black River as an aesthetic land use resource.

In addition, the number of gas stations and other uses that could threaten water quality should be limited along roads in that area adjacent to the rivers.

The Connecticut River is also an important natural resource for the town of Springfield. The agricultural land next to the Connecticut River and part way up the Black River has been protected to some degree by a River Protection Overlay District. Conservation of agricultural land next to the river and additional protections in the overlay district could ensure that the river and the scenic agricultural resources next to the river are protected for future generations.

### **Protection of Scenic Views and the Night Sky**

Springfield has numerous scenic views among its hills and in the Black and Connecticut River valleys. Proper land use should take advantage of these scenic views without unduly compromising them. Skitchewaug Mountain, and its companions which front on the Connecticut River in Springfield, are an important part of the overall view up and down the Connecticut River valley. In order to protect these views, development along ridgelines should be prohibited or given height limitations so that structures would not stick out above treelines. (See Natural and Scenic Resources chapter for identification of certain scenic view areas.)

A common element to many views is open pasture and field lands. These can be protected through policies that encourage clustering and good design. Developers can be encouraged to leave open fields open, preserving them as common lands, placing housing in wooded areas at the edge of open fields, and other context-sensitive planning. Planning manuals such as *Growing Greener* and *Conservation Design for Subdivisions* by Randall Arendt include recommendations for zoning and subdivision language that will encourage the preservation of open space and increase density so as to protect valuable scenic and natural resources. Springfield should consider forming a Conservation Commission to deal with this and other recommendations. Viewshed management zones may be a land use tool worth further exploration.

The annual gathering at Stellafane for amateur telescope makers has highlighted the importance of preserving the dark night sky. Lighting standards have been incorporated into the Springfield zoning bylaws, and an overlay district has been established for the protection of the night sky in the vicinity of the Stellafane observatory. Lighting standards should be reviewed and strengthened to minimize additional impacts on the night sky.

### **Interstate 91, Exit 7 Interchange Area**

Since the building of Interstate 91, the area around the Exit 7 Interstate Interchange has primarily served interstate traffic. Important natural resource and recreation areas are also located near the

interchange, especially since the completion of the Toonerville Trail (for bike and pedestrians) which connects Route 5 with downtown Springfield. With the completion of the new correctional facility, and the planned development for the “Springfield East” Industrial Park next to the correctional facility, it is likely that traffic around the interchange area will increase, and development pressure will also increase. The Interchange area provides an important first view of Springfield. Careful attention should be paid to retaining the present natural and scenic characteristics of the area, the efficient flow of traffic due to limited highway access points, the safety of users of the Toonerville multi-use trail, avoiding high traffic commercial generators and the location of businesses adjacent to the interchange that complement businesses in the downtown. This latter concern has been addressed with the Exit Seven (7) Zoning District.

## **Using The Future Land Use Map**

The land use category definitions that follow are descriptions of the areas shown on the Future Land Use map. They are meant to serve as a guide to the types and intensities of uses appropriate for each area by describing the values, or “functions,” that it provides for the Region. The definitions do not prescribe or prohibit a specific use or set of uses for any category; the actual uses of land will have significant overlap between categories. For example, forestland will continue to support rural residential development, conservation land will support many types of recreation, and some recreation land will support forestry use. Planning for future development should take into account the functional viability of various land uses. If a particular land use is significantly compromised so that it cannot function in a sustainable manner, inevitably the larger whole will be impacted. It makes sense that this potential cost is weighed in advance, rather than after the fact. Development is inappropriate if, alone or combined with other uses in the area, it threatens the values described below.

The Future Land Use Map is general in nature, and the boundaries of different areas were drawn with this in mind. They are not meant to be detailed representations of present conditions, nor are they intended to be precisely bounded areas of completely segregated land uses for the future.

### **Categories**

#### **1. Agricultural**

Agricultural land is important to the town’s economy, food supply (in the form of local farmers markets), cultural heritage, and rural character. It is a major contributor to the land use patterns and aesthetic qualities that make Springfield a desirable place to live, work, and visit. Land in agricultural use, and idle open land with agricultural potential both possess these values. The potential for agricultural use and production should be maintained in designated agricultural areas wherever possible.

#### **2. Forest**

Forest resources are valued for their ability to provide wildlife habitat; protect air and water quality; support timber production and forest products economies; and provide opportunities for outdoor recreation. In town forests, public access and educational and recreational value should be the highest priorities, therefore these areas are noted as both forest and recreation on the map. In some areas, especially those served by existing roads, forest areas will also accommodate residential and agricultural uses.

### **3. Recreation**

Public and private indoor and outdoor recreation opportunities are a vital part of the Springfield's quality of life. Publicly accessible recreation opportunities should be enhanced where possible, and should not be significantly diminished. Designated recreation areas should retain their recreational value to the public; where development would reduce recreational opportunities, alternatives should be provided whenever feasible.

### **5. Conservation**

Conservation areas are lands that possess outstanding value or potential as wildlife habitat, recreation areas (according to individual management plans), educational resources, fragile natural areas, protection of water supplies, or aesthetic resources. Conservation lands represent relatively pristine areas of Springfield that residents wish to preserve in their natural state for future generations, and should receive the highest level of protection from development. Special care should be taken in any resource management or extraction plans to maintain the character and value of these areas. Conservation areas are especially beneficial when surrounded by compatible uses such as forest and agriculture.

### **6. Mixed Use**

Mixed use areas should be used for a combination of higher density residential, a variety of commercial, and some light industrial uses. These uses should also be surrounded by and interspersed with public and recreational uses. Development in these areas should be of the highest density, and should facilitate development of a circulation system that accommodates pedestrians and other non-vehicular travel.

### **7. Industrial**

Industrial areas are meant to accommodate heavier industrial uses that may not be appropriate for mixed use areas, as well as concentrations of lighter industrial uses. Industrial areas should be used both to isolate industries incompatible with commercial and residential areas, and to congregate industrial uses where traffic and other impacts can be lessened by planning and mitigation techniques.

### **8. Institutional**

Institutional areas represent substantial areas of land that should continue to be used for government, transportation, educational, and other similar facilities.

### ***Special Considerations in all Land Use Categories***

There are several important resources that may occur within any of the land use categories, and which merit special attention and protection. They include: Public Water Supply Source Protection Areas; floodplains; slopes; vegetated areas next to surface waters; wetlands (as defined by the Vermont Wetland Rules); Natural Heritage Inventory sites; critical deer wintering habitat and bear habitat as defined by the Vermont Agency of Natural Resources; regionally significant historic sites; and other locally defined sensitive natural areas and scenic resources. Development should avoid and minimize negative impacts to these resources.

## **Goals**

1. Minimize the negative impacts of sprawl and strip development that is occurring on major roads outside the downtown.

2. Encourage the adaptive reuse of underutilized and vacant structures and lands.
3. Encourage smart growth in the community through the identification and mapping of optimal growth areas.
4. Preserve the character of residential neighborhoods.
5. Preserve scenic views, productive forests and agricultural land via cluster development and effective design practices. [See *Growing Greener* and *Conservation Design for Subdivisions* by Randall Arendt].
6. Promote revitalization and redevelopment of the former industrial properties on Clinton Street in a way that does not negatively impact businesses in the downtown and the Plaza.
7. Encourage all development along the Black River to capitalize on the river's aesthetic, land use, resource potential.
8. Retain the present natural and scenic characteristics of the Exit 7 interchange area.
9. Enhance public awareness of historic buildings and sites in Springfield's downtown, whose enhancement would improve the downtown's streetscape and promote economic development and revitalization.
10. Promote a greater awareness of Springfield's archaeological heritage.
11. Enhance the overlay districts which protect the farmland along the Connecticut River, and create an overlay district for development next to the Black River.
12. Create a Conservation Commission to oversee the protection of important natural and scenic areas.
13. Retain and improve access to and use of public lands, and ensure that any development adjacent to public and semi-public lands will not unreasonably affect the beneficial public use of these lands.
14. Preserve the use of the Hartness Airport and enhance the airport area to protect the abutting uses, while promoting the airport, which benefits the residents of the region.
15. Improve and clarify review procedures for regulation amendment and adoption.
16. In the Regulations, consider the use of incentives, rather than limits, to promote desired development, conservation, and economic growth.

## **Objectives**

1. Develop additional design and site plan review specifications for areas that are already impacted by strip development in order to reduce negative impacts of such development.
2. Develop standards for access management, expanded site plan review and conditional use criteria which promotes shared access to multiple sites and interconnection of adjacent development along major highways, and provides for the needs of bicyclists and pedestrians.
3. Adopt performance standards for commercial and industrial development, which set specific limits on noise, air pollution (dust, ash, fumes, vapors, gases), hazardous and flammable

materials use or storage, light, vibration, odors, and distance from residential units for use in permitting and site plan review.

4. Adopt and maintain design specifications for commercial development, which include such things as: reduced building setbacks from the road with parking behind the buildings, clustering buildings around common access roads, reducing the number of access roads, and providing appropriate signs and visual buffers. [See *Growing Smarter: Best Site Planning for Residential, Commercial and Industrial Development*, published by the Vermont Forum on Sprawl (2001)].
5. Maintain the downtown as the heart of Springfield through the use of financial and non-monetary incentives, and targeted municipal investment.
6. Maintain the economic vitality of the Springfield Plaza and continued development and marketing of the plaza for new business, while encouraging safe traffic patterns, access, parking, and further aesthetic improvements.
7. Ensure that most commercial uses are not located in residential areas, but rather are limited to the downtown or designated commercial areas; those uses that would improve neighborhood character, such as "mom and pop" stores and home occupations should be allowed in residential neighborhoods.
8. Improve the quality and condition of existing housing in the downtown and encourage housing as one of the redevelopment options for dilapidated or underused buildings.
9. Identify sites for future growth based upon the Principles of Smart Growth listed in this chapter.
10. At the Exit 7 interchange, prohibit the expansion of new businesses adjacent to the interchange, and allow for the expansion of existing businesses to uses which will not compete with businesses in the downtown.
11. Retain the Exit Seven (7) Zoning District, and implement measures that could be used to address the following interchange issues, namely, an access management program that would control curb cuts, and expanded site plan review that would include strict requirements for lighting, noise, aesthetics, signage, landscaping and screening, parking and open space and non-vehicular traffic
12. Evaluate the number and participation on volunteer boards/commissions in Springfield to ensure the most efficient distribution of volunteer time and energy. Consider whether some of these groups could take on tasks associated with a Historic Preservation Commission and/or Conservation Commission. Investigate the potential for Springfield pursuing and attaining the status of "Certified Local Government program" for historical resources.
13. Enhance the preservation of scenic views and forestry and agricultural land in the Town Zoning Regulations through Land Reserve zoning and an expanded Riverfront Protection Overlay District along the Black and Connecticut Rivers.
14. Encourage housing developments that preserve scenic resources through clustering or careful siting of building lots, and other context-sensitive planning. (See *Growing Greener*, by Randall Arendt.)

15. Undertake a planning study for Clinton Street that includes revitalization of former industrial areas as well as alternatives for enhancing access and appreciation of the Black River.
16. Form a Conservation Commission to inventory and conduct studies of important natural resources, assist the planning commission and zoning board of adjustment on the environmental impact of projects on the town's resources and provide and assist the town on matters affecting the local environment.
17. Review and improve regulations and policies to improve and ensure the continued access to public lands, and require any development adjacent to public and semi-public lands to continue to provide access to these lands.
18. Study and design a zoning district for the area around the Hartness Airport to preserve and enhance the uses of the airport.
19. Examine current land use patterns, to determine future land use from a long term, cost/benefit perspective, in order to avoid additional costs to the town's infrastructure, unwanted sprawl, and the loss of cultural, historic, economic, agricultural, scenic and aesthetic resources.
20. Expand site plan review criteria and increase the variety of uses subject to the review, in order to more readily achieve the goals and objectives of this Town Plan.