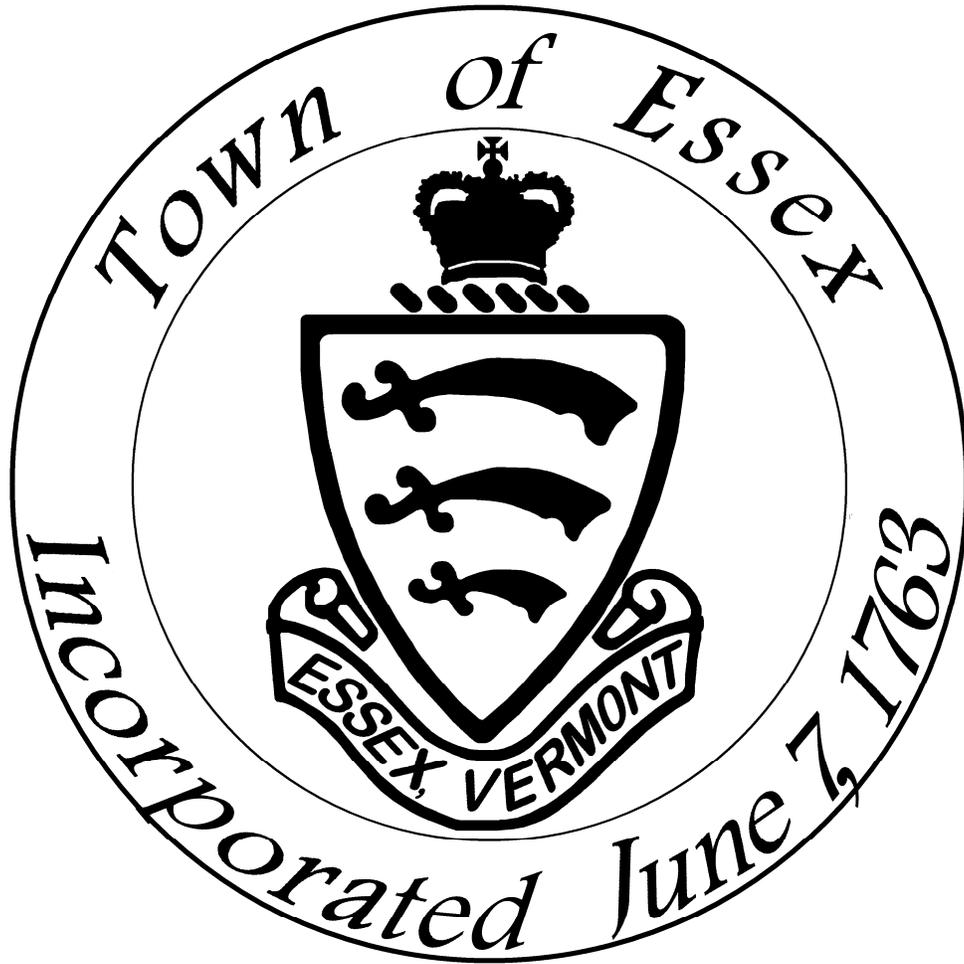


2011 Town Plan



Adopted March 1, 2011
By Essex Town Voters

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9. NATURAL RESOURCES

Among the most fundamental elements of a Town Plan is a description of natural resources. If we seek to protect our natural resources and provide a high quality of life for the citizens of Essex, we must develop a Town Plan based on the capabilities of the land. This section provides an overview of Essex's natural features. Included are descriptions of the Town's topography and slope, geology, soils, water resources, farm and forestlands, and natural areas.

9.1 Topography and Slope

Topography refers to the shape of the land, its ups and downs, hills, ridges and plateaus. Slope refers to the gradient or steepness of the land. In a community context, these features impose a natural order on the land that, in turn, influences the pattern of existing and future land use.

Feature	Elevation in Feet
Cilley Hill/Sawmill Road	1330
Brigham Hill	1032
Saxon Hill	807
Bixby Hill	666
Winooski River at 68 Acres area	170

Source: 2006 Essex Town Plan

Essex has an extremely varied topography. The flood plains of the Winooski River, and Browns River and Alder Brook represent the flat areas of Town, while the outflow of Alder Brook has predominantly steep slopes in excess of 20 percent. The northeast quadrant of Town is marked by high rolling hills with a few areas of severe slope, as is the northwest portion of Town around Brigham Hill. Topography is expressed as elevation – the height of land above sea level. Elevations within Essex range from 170 feet in the southwestern part of the Town to 1330 feet in the northeastern corner of the Town. Major topographic features in Essex are listed in Table 9-1 above and are visible on Map 12, *Contours*.

The percent of slope is determined from the number of feet of vertical rise over 100 feet of horizontal distance. Slope conditions determine the feasibility of land use, the steeper the slope, the greater the restraints upon building in a particular area. Map 14, *Slope*, has grouped the degree of slope in Essex into three categories. Generally slopes of 0 to 3 percent are suitable for almost all types of construction but may require drainage improvements; 3 to 10 percent are most desirable for construction since they provide a minimum of restrictions; 10 to 15 percent are suitable for low density housing on large lots with some consideration for erosion control and runoff; 15 to 20 percent is where construction becomes very costly and erosion and runoff problems are likely – these slopes are unsuitable for most on-site sewage disposal systems, therefore development should

be discouraged; and more than 20 percent is where all construction should be avoided because of the likelihood of environmental damage.

9.2 Geology

Geology, the study of the earth's crust, is the basis of all else in the landscape. The underlying strata determine the topography, soil types, availability of water, vegetation and to some extent, a community's economic base if it is valuable for commercial extraction. The Town of Essex is composed of land forms and soils molded and deposited by glaciers that traversed the area and the ancient lakes and seas that covered the low lands of the Town. Geologic materials consist of two categories: bedrock and surficial materials.

Bedrock – Essex is underlain by a variety of rock types, but these are dominated by a mixture of lightly metamorphosed rocks originally sedimentary in nature (Refer to Map 15, *Bedrock Geology*). Principal among them are quartzite, slate, schist, dolomite and limestone marble. The rocks date from the Early Cambrian to the Early Ordovician eras. In approximately the eastern two-thirds of the Town, the rocks are of the Underhill Formation, primarily schist and slates. To the west (roughly west of VT Route 2A) the rocks are dolomite and limestone.

Metamorphic rock is, as a general rule, hard and stable. According to the Vermont State Geological Survey, there are no known mineral deposits in Essex, but the rock, sand, and gravel are all capable of being mined/quarried. Thus, the Town should plan for and be better prepared to regulate such activity.

The only noteworthy feature regarding bedrock in Essex is the existence of two thrust faults running southeast to northwest through the southwestern quadrant of Town, near Lost Nation and Colchester Roads. There is no recorded mention of movement along these faults so seismic danger is minimal. Below the fault, however, is a deep layer of very porous carbonate which allows ready movement of water and facilitates the aquifer recharge process. At present, this porous layer of carbonate is protected by the upper impervious plate and/or a substantial layer of surficial material.

Surficial Materials – In much of Essex, bedrock is buried by unconsolidated materials directly or indirectly related to the Ice Age glacier. In the uplands, generally above 500-600 feet in elevation, glacial till predominates; whereas below this level there are extensive areas of sand and gravel formed in ancient lakes in the area. In many places, the sands and gravel are underlain by clays and/or till. Gravel deposits are located in some places at the 500-600 foot level, generally at the base of hills. According to a map prepared in 1961 by the Vermont Department of Highways, noteworthy sand and gravel deposits in the Town of Essex include:

1. Northern part of Osgood Hill Road
2. Weed Road and Sleepy Hollow Road
3. Intersection of Brigham Hill Road and Brigham Hill Lane
4. Northern part of Alder Brook
5. Intersection of Lamore and Lost Nation Roads
6. VT Route 2A corridor south
7. Southeastern quadrant of the Town of Essex

It should be noted that some of these deposits are located in environmentally sensitive areas.

9.3 Soils

All soils in the Town of Essex have been mapped and typed by the U.S. Department of Agriculture Natural Resources Conservation Service (formerly Soil Conservation Service). Soil types indicate the physical capability of the land to handle development and the resource production potential of the land. Unfavorable soil types for development typically contain the following properties: excessive slopes, shallow depth to bedrock, wet soils, unstable soils, and erodible soils. Map 13, *Soils*, shows where certain general soil associations predominate. The soils in association groups 8 and 9 are level, deep and well-drained and are well suited or have slight limitations for on-site septic disposal. The soil association groups 4, 5, 6, 7, 13, 14, and 15 have generally severe limitations due to the unfavorable characteristics described above which inhibit the absorption of septic effluent. This map shows only the general soils pattern for Essex. More detailed information is available from the soil survey maps and interpretations from the Natural Resource Conservation Service report.

9.4 Groundwater

Groundwater is water below the earth's surface which has come from precipitation that does not evaporate or run off the land and which infiltrates into the soil and bedrock to recharge the supply. Information about the quality and supply of groundwater is important to decisions regarding site evaluation for development. It is also critical that the Town have a means of monitoring those factors for the purpose of protection from contamination and depletion. Currently, the information available to the Town is limited and efforts should be undertaken to map those areas having high groundwater potential in order to ensure their protection.

9.5 Surface Waters

Surface waters include rivers and brooks, lakes and ponds, areas subject to flooding and wetlands. These water resources are important from a range of perspectives, including public health and safety, recreation, wildlife diversity, visual sensitivity, and environmental quality. Water resources are distributed throughout the Town, and influence the distribution and conservation of many open land resources. These areas are included on Map 16, *Water Resources*, and were considered in the Town's "Open Lands Study" prepared in 1989. Among other regulated techniques, buffers regularly should be used to help protect surface waters from undue adverse land development.

In 2008, the Essex Zoning Regulations were amended to include requirements for the protection of surface waters and wetlands. The buffer requirements are intended to retain and protect heavily vegetated areas of native species that border streams, lakes, ponds and wetlands in Essex in order to reduce impacts from flooding and stormwater run-off, to prevent soil erosion, to protect wildlife, fish habitat and ecological diversity, and maintain water quality. The buffer requirements specify that buffers along streams must be at least 50 feet in width. Shoreland buffer zones must be at least 100 feet in width, and wetland buffers zones must be at least 100 feet for Class I wetlands and 50 feet for Class II wetlands.

Rivers and Brooks – The Town of Essex is drained by three watersheds – the Winooski and Lamoille River Basins and a small area drained by Indian Brook and Sunderland Brook, which drain directly to Lake Champlain. The Browns River and Abbey Brook drain the northeast section of the Town and flow into the Lamoille River, while Alder Brook drains into the Winooski River. The

Vermont Agency of Natural Resources established a water quality classification system which specifies (1) water quality goals to be attained where actual water quality is lower than the standard or (2) the minimum standard to be maintained where actual water quality is higher. Virtually all of the waterways in Essex have been classified as Class B, suitable for drinking with filtration and disinfection; irrigation and other agricultural uses; swimming and recreation. The exceptions are two waterways classified as A2: A tributary of the Alder Brook between Founders Road and Butternut Court, and a tributary in the Pinewood area that includes the reservoir at Valley View Road¹. The Winooski River is classified as Class B, with special Management Zones immediately below the IBM treatment plant and the Tri-Town treatment plant in Essex Junction.

Flood Hazard Areas and Floodways – A Flood Hazard Area (a.k.a. 100 year floodplain) has a one percent probability of flooding in any given year. A floodway is the channel of a river or other water course and the adjacent land area that must be reserved to discharge the 100-year floods without accumulatively increasing the water surface elevation more than one foot and is the most hazardous section of a flood hazard area. Both of these areas have been identified on the Flood Insurance Rate Maps prepared by the Federal Insurance Administration and approved in 2010. The Zoning Regulations were updated in 2010 to reflect new requirements by FEMA in the flood hazard area. These areas include the Winooski River, Alder Brook, Browns River, and Indian Brook. The Town has also established a Floodplain zone (C2) along all of the Town waterways not included in the federal mapping. The C2 zone requires a minimum setback from all stream banks and prohibits development within that setback.

9.6 Natural Heritage Element Inventory and Assessment for the Town of Essex, Vermont

In 2007 Arrowwood Environmental performed a Natural Heritage Element Inventory and Assessment in conjunction with the 2008 Essex Open Space Plan. The Inventory and Assessment is incorporated in the 2011 Town Plan by reference. It included the following tasks: 1) an inventory and mapping of critical habitat features and corridors; 2) an update of the 1991 natural communities map; 3) an update of the wetlands resource map; and 4) a remote inventory and mapping of vernal pool locations. Updates to Town Plan maps 16 and 17 have been made to reflect this work by Arrowwood Environmental.

Wetlands – Wetlands can generally be defined as areas 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. The U.S. Department of the Interior has prepared a National Wetlands Inventory by mapping all wetlands one acre or more in size.

The wetlands appearing in the inventory, and as updated by Arrowwood Environmental are shown on Map 16. The state has stringent Wetland Rules to determine which areas are wetlands, but they are not included on the maps at present.

There are 430 wetlands comprising 3,081 acres in the Town of Essex. The number, type, and size of the wetlands mapped in Essex are presented in Table 9-2. A total of 34 wetlands in Essex were considered either locally or state significant for either functions and values, natural communities or

¹ The Vermont Department of Environmental Conservation has proposed that this waterway be reclassified to Class B, but that proposal has not yet been approved.

both of these functions. These wetlands are contained within the wetland complexes summarized in Table 9-3. The Natural Heritage Elemental Inventory and Assessment recommends management objectives for each of the Town's significant wetland communities which should be incorporated into the Zoning and Subdivision regulations.

Community Type	Number of Sites	Average Acreage	Total Acreage
Agricultural Field	38	26.0	989.7
Alder Swamp	40	7.4	294.9
Beaver Wetland	26	5.0	129.9
Cattail Marsh	8	3.1	24.6
Deep Broadleaf Marsh	2	5.2	10.3
Floodplain Forest	17	8.6	145.5
Hemlock Swamp	1	2.5	2.5
Northern Hardwood Seepage Forest	9	2.6	23.7
Old Field	38	7.0	266.4
Open Water	13	3.1	40.4
Pond	80	0.4	35.1
Red Maple-Black Ash Swamp	23	14.3	329.6
Red Spruce-Hardwood Swamp	5	29.3	146.6
Seep	2	0.6	1.1
Shallow Emergent Marsh	123	4.8	591.5
Spruce-Fir-Tamarack Swamp	5	9.9	49.7
Total	430	--	3081
Source: Natural Heritage Element Inventory and Assessment, 2007			

Vernal Pools – Vernal pools are seasonal wetlands that typically contain water during the wet spring months but become dry as the summer progresses. These isolated wetlands typically occur under a forest canopy, lack fish and provide habitat to a wide variety of wildlife. A total of 19 vernal pools were identified during the remote inventory and field work. Most of them are located east of Indian Brook or scattered throughout the forests in the northeast corner of Town.

Arrowwood Environmental suggested specific buffer zones and management recommendations for the vernal pools mapped in the fields. Regulations including these buffer zones should be adopted by the Town.

Alder Swamp	Alder Swamp* Alluvial Shrub Swamp
Red Maple-Black Ash Swamp	Red Maple-Black Ash Seepage Swamp Calcareous Red Maple-Tamarack Swamp Red Maple-Acidic Basin Swamp* Red Maple-Red Spruce Swamp
Beaver Wetland	Shallow Emergent Marsh* Alder Swamp Open water beaver flooding* Deep Broadleaf Marsh
Forestplain Forest	Silver Maple-Ostrich Fern Floodplain Forest* Sugar Maple-Ostrich Fern Floodplain
Red Spruce-Hardwood Swamp	Red maple-Northern White Cedar Swam Hemlock-Hardwood Swamp Red spruce-Hardwood Swamp
Source: Natural Heritage Element Inventory and Assessment, 2007 * Indicates that most common community found within the mapping unit	

9.7 Agricultural Lands

The decline in farm activity both in Essex and in Chittenden County was described in previous Essex Town Plans. Certainly, the number of traditional dairy farms serving as the landowner's primary source of income decreased. Yet farming activities remain visible in Essex, and the variety of activities likely has increased.

Table 9-2 documents the continued presence of farming in Essex. After reaching a low of 5 farms in 1989, the number of farms participating in the Town of Essex Farm Contract Program has increased to 9. Additional agricultural parcels are not included under the Essex Farm Contract but are enrolled in the Vermont Land Use Program. In the early 1990s there were 26 farm parcels on the Town's grand list. Notably, by 2007 only seven parcels, totaling 1,312 acres were listed as "farm" parcels – and none were located in the Agricultural-Residential Zoning District, over the same period, however, the number of parcels enrolled in the Town's Farm Tax Stabilization Program increased from five in 1989 to nine in 2007. Enrolled farm acreage currently totals 2,143 acres.

Very few examples remain of dairy farms with fields, cows and barns all located on a home site in Essex. One relatively large dairy farm is in operation on Chapin Road and two or three smaller farms also are located in the Town. Several large agricultural fields in Essex are used to support dairy farms located in neighboring communities including Jericho, Williston, Westford and Fairfax.

The remaining Essex participants in either the Vermont Land Use Program or the Essex Farm Contract contain a wide variety of agricultural activities – raising beef cattle, an apple orchard, a fruit and vegetable farm, two Christmas tree farms, and a pumpkin patch. Horses, sheep and other farm animals can be found on numerous smaller parcels throughout the rural portions of Essex.

The 1989 "Essex Open Lands Study" inventoried the Town's most important open land resources. The study conducted a Land Evaluation and Site Assessment (LESA) of 53 farm parcels on the basis of the productivity of their soils and such attributes as size, character, location and current use.

Though direct comparisons are difficult, given boundary and ownership changes, of the 53 parcels identified, at least 24 (45 percent) have since been subdivided and, according to current grand list information, all but six (89 percent) have been developed or at least partially converted to other mostly residential uses. Of the 53 parcels evaluated in 1989, 20 were identified a “prime” farmland, comprising around 2,000 acres (70 percent in floodplains). As then anticipated, farmland was taken out of production for the construction of the Circumferential Highway (I-289), and for two large residential subdivisions.

The 2001 Essex Rural Lands Study addressed some of the same issues as the more comprehensive 1989 study. Recommended actions included an update of natural resource inventories which was done in conjunction with the 2007 Natural Heritage Inventory and Assessment, a survey of small farming operations, continued zoning restrictions on development in the floodplain (these restrictions were estimated to protect about 70 percent of the prime farmland identified by the 1989 Essex Open Lands Study), and expanded use of the Significant Features Resource Map in subdivision review.

By other measures, Essex still has a significant amount of land in production in the Browns River Valley and along the Winooski River. A 2000 parcel-based assessment of land use in Chittenden County, conducted by the Chittenden County Regional Planning Commission, identified more than 60 parcels in the Town that still supported some agricultural function or activity. Most of these are included in the Town’s grand list as larger Residential (R2) or “miscellaneous” parcels – a listing category that includes undefined or transitional open land.

A recent University of Vermont analysis of enhanced 2001 satellite (Landstat) imagery identified approximately 4,600 acres of farmland remaining in the Town, comprising roughly 17 percent of the Town’s total area.

Farmland conversion reflects, in part, ongoing changes in the local farm economy – many of which were identified in the 1989 study. By 2007, there were only two dairy farms left in the Town. On the other hand, USDA Agricultural Census data suggests that there are a growing number of smaller, more diverse farming operations in the area – such as Mazza’s Vegetable Farms and the Chapin Orchard – that market and sell their products locally through direct sales, farm stands, farmers markets and Community Supported Agriculture.

9.8 Forest Lands

More than 12,500 acres in Essex are forested. The Open Lands Study prioritized and identified significant forestland as contiguous tracts of wooded land having the potential for forest management due to the productivity of the soils, the species mix, the size of the overall tract and presence of large (50+ acres) properties and managed wood lots. Property files and resource maps of the Town were reviewed by the Conservation Committee and foresters with first hand experience in the forest resources of the Town. The significant areas identified in the forestland inventory are shown on Map 17 and include the following:

1. Upper Indian Brook Valley and Brigham Hill
2. Osgood Hill
3. Bixby Hill
4. Saxon Hill
5. Lower Alder Brook Valley

The total area in Essex identified as prime forestland is approximately 8,300 acres. The above-mentioned areas were considered for commercial harvesting potential and for multiple use values (environmental and recreational). For a specific description of the forest cover type and significance, please refer to the Essex Open Lands Study. The 1989 Open Lands Study should be updated to assess the number of designated acres which no longer meet the definition of prime forestland set forth in 1989.

Upland Natural Communities – The 2007 Natural Heritage Element Inventory Analysis updated the existing data on the two upland natural communities tracked by the state Non-Game and Natural Heritage Program (NNHP). These are Sunderland Headwater woods and the Vermont Sandplain site. The Sunderland Headwater Woods is a seven acre, dry sandplain forest near the headwaters of the Sunderland Brook which as seen little disturbance. The Vermont Sandplain, comprised of pitch pine and white pine trees mixed with black and red oak, is now three acres in size, down from five acres, due to development. The 2007 Natural Heritage Element Inventory analysis suggested management recommendations for these significant upland communities which should be incorporated into the regulations.

The Town should consider setting guidelines for the harvesting of wood by individuals or commercial entities, as the cost of fossil fuels rise.

9.9 Natural and Fragile Areas

Natural and fragile areas are defined as “areas of land or water that are unusual and/or have significant plant or animal species or geological or similar features of scientific, ecological, or educational interest” (1988 Natural Areas component of the Vermont Recreation Plan). Essex has several features meeting this definition including unique forest cover types, wildlife habitats, rare plant communities and an esker. Map 17 shows these areas. Sources for this information include inventories maintained by the state, the 1973 Quality Environment Plan, the 1989 Open Lands Study, the 1989 Natural Resources Inventory, the 1986 Municipal Development Plan, the 2007 Natural Heritage Element Inventory and Assessment, and the 2008 Open Space Plan.

Chapter 7, *Parks and Recreation*, includes an inventory of significant natural areas in Essex that have long been considered worthy of protection.

9.10 Wildlife Habitat

Wildlife habitat in the Town of Essex is an ever-changing mosaic, as humans and wildlife continually adjust and readjust to each other’s presence. The landscape constantly changes as active agricultural lands go fallow and as humans increasingly settle in Essex.

The Essex urban core is largely concentrated in the southern portion of Essex, which for wildlife presents highly fragmented and isolated backyard, woodlot, wetland and streamside environments marked by a strong human presence. Southern Essex is home to species of wildlife that can live in this fragmented environment where roads, houses, industries, people and their pets are found. Here white-tailed deer, red fox, skunk and raccoons can be found. The northern parts of Essex, where the landscape is dominated by forests with both broad-leaved deciduous and needle-leaved evergreen trees, provide habitat for a rich diversity of wildlife including waterfowl, herons, hawks, coyote, moose and mammals such as snakes, mink, fox, and muskrat.

The 2007 Natural Heritage Element Inventory and Analysis provides a detailed description and mapping of the Town's wildlife habitat elements, as well as a discussion of the larger Contiguous Habitat Units (CHU), which serve as the starting unit of measures and description. The management recommendations for the wildlife habitat should be incorporated into the zoning and subdivisions regulations.

9.11 Land Capability Summary

The preceding information is on various Town Plan maps, which show the capability of land areas to accommodate development based on slope (Map 14), wetlands and floodplains (Map 16) and suitability for on-site sewage disposal (Map 13).

9.12 Goals, Objectives and Strategies

Goal 9.1: Gather and regularly update information on areas that are suitable for generating renewable energy.

Goal 9.2: Update, augment and regularly maintain existing information and studies on the Town's significant natural resources, and implement the recommendations of those studies.

Objective 9.2.1: Update existing natural resources information drawing from the recommendation in the 2008 Open Space Plan.

Strategy 9.2.1.1: Prepare a Natural Resources Plan for the Town drawing from the recommendations in the 2008 Essex Open Space Plan. In addition to developing up-to-date information on significant farm and forest land use in Essex, the Natural Resource Plan should include new information on air quality, watersheds and water quality, wildlife, including aquatic species, rare and endangered species, and exotic/invasive species.

Strategy 9.2.1.2: Coordinate with the state Natural Resources Agency and the Chittenden County Regional Planning Commission to ensure the Town has the most recent natural resources mapping data.

Strategy 9.2.1.3: Refine local natural resources information, considering the natural resource values to be protected within the sewer service area, the resource values in the rural portions of the Town, and resources that are common to both areas. For example, new natural resources inventories and management plans should be developed on street trees in the sewer service areas and on forest land in the rural and undeveloped areas of the Town.

Strategy 9.2.1.4: Apply to state and federal agencies for planning and implementation loans/grants to acquire and update the Town's natural resource data.

Objective 9.2.2: As a priority task for updating natural resources information, the Town shall conduct studies to improve understanding of the existing water quality conditions in the Town and propose recommendations for improving the Town's water quality management.

Strategy 9.2.2.1: The Community Development Office in conjunction with the Department of Public Works and the Conservation Committee should initiate water quality improvement studies in the Town. The Town will coordinate with the appropriate

state/regional agencies and any university departments. This work shall be coordinated with implementation of the Town's Stormwater Management Plan for improving the quality of impaired waterways.

Strategy 9.2.2.2: Collect baseline data on the water quality of the major water bodies in Essex.

Strategy 9.2.2.3: Prepare a GIS-based watershed map of the Town and perform an analysis of the watersheds to better understand how existing and proposed land uses will affect water quality, including information on the percentage of impervious surfaces in each watershed.

Objective 9.2.3: The Town shall regularly consolidate its natural, renewable, and cultural resource data in an updated Significant Features Map and shall use the map to guide the design and review of public and private projects.

Strategy 9.2.3.1: Continue to use the Significant Features Map in the review of subdivisions and site plans to identify important natural and cultural features to be protected.

Strategy 9.2.3.2: Adopt development review standards to assist applicants in reducing the impact of new development on the Town's significant features, including renewable energy resources, scenic resources, water quality, and air quality, and incorporate the guidelines into the zoning and subdivision regulations.

Strategy 9.2.3.3: The Town shall consider any impacts on significant features in its capital facilities planning and preparation of future plans or zoning district changes.

Strategy 9.2.3.4: The Planning Commission shall review and recommend changes to the Significant Features Map.

Objective 9.2.4: Undertake a study to establish air quality goals/objectives for the Town and explore the implementation of simple methods of air quality improvement such as eliminating idling vehicles at schools, improving traffic signal timing, etc.

Goal 9.3: Engage townspeople in protecting natural resources and encourage the management of open lands for farming, forestry, recreation and conservation.

Objective 9.3.1: Establish a land preservation program to help ensure that critical natural and scenic resources are preserved for future generations and that sufficient open lands are preserved to meet the active and passive recreation needs of the community.

Strategy 9.3.1.1: Establish a land acquisition and preservation program.

Strategy 9.3.1.2: Raise funds and implement a land preservation program, addressing the following issues:

- Establishing a land preservation fund through the property tax mechanisms;
- Potential for establishing a land trust in Essex or with neighboring towns;
- Amending assessment practices and broadening tax stabilization provisions for owners of open lands;
- Acquiring easements for conservation and trail rights-of-way;
- Studying transfer of development rights as well as programs granting developers incentives for preserving land outside the sewer core; and

- Reviewing Town policies for any adverse, indirect effects on open land protection.

Strategy 9.3.1.3: Identify priority locations for land preservation based on the goals and objectives of this Town Plan. Priorities should include sites with large contiguous acreage, lands adjacent to already conserved land, renewable energy resources, watersheds/waterways, especially floodplains, and contiguous corridors for recreation and wildlife.

Strategy 9.3.1.4: Pursue the purchase of lands or development rights immediately outside the sewer core where the land has potential to meet the Town's active and passive recreational needs, and where the establishment of recreational facilities will help to create a green-belt around the developed portions of the Town.

Strategy 9.3.1.5: Prepare a plan for managing acquired lands, including funding, for every acquisition proposal.

Strategy 9.3.1.6: Promote public awareness of recreation/conservation resources in the Town that are underutilized. If necessary, improve access with parking and signage.

Objective 9.3.2: Provide townspeople with information about environmentally sound management of land and ways individuals can assist in protecting natural resources.

Strategy 9.3.2.1: Obtain brochures, videos, and books prepared by the Vermont Agency of Natural Resources and other state and non-profit organizations addressing actions people can take to improve the environment and make the information readily available at the library and Town offices. Topics of information could include forest management, the current use program, barn restoration programs, landscaping for wildlife habitat, household chemical disposal, and responsible trail use, etc. Information on up-coming events, staff and committee member contacts and ways to volunteer, should also be provided.

Strategy 9.3.2.2: Work with the Community Development Department staff to develop an information packet that can be given to new homeowners or people applying for a zoning permit, septic permit or through water bills and other points of contact with the Town, addressing natural resource issues pertinent to their project.

Strategy 9.3.2.3: Develop a hand-out for rural landowners informing them of local and regional professional resources available for assisting them in managing their land, including but not limited to: the County Forester, the Vermont Land Trust, the Chittenden County Conservation District, etc.

Strategy 9.3.2.4: Write a conservation column for the local newspaper addressing conservation issues and/or a quarterly newsletter addressing current conservation issues.

Strategy 9.3.2.5: Create a conservation link on the Town website and use it to present the best of the information collected under the strategies above. Additionally, all digital data pertaining to land use and natural resources shall be made available to the public in a user-friendly format on the Town of Essex website. Data shall meet the compliance criteria set forth by the ADA.

Strategy 9.3.2.6: Solicit residents for ad-hoc committees to work on issues/problems identified by the Selectboard, Planning Commission or Conservation Committee.

Committees should be formed not only when revising the Town Plan but also at times when significant natural resource issues face the Town.

Strategy 9.3.2.7: Encourage partnerships between volunteer groups and the Town to promote and organize the maintenance of trails and conservation areas.

Objective 9.3.3: Model environmentally sound practices for the community.

Strategy 9.3.3.1: Perform an environmental audit to identify local government practices that can be improved to reduce environmental impacts and long-term costs.

Strategy 9.3.3.2: Establish a policy for purchasing recycled paper products to join state and federal agencies working to create a stable market for recycled products.

Strategy 9.3.3.3: Examine Town road maintenance practices and implement any necessary changes to ensure that water quality impacts from road maintenance are minimized.

Goal 9.4: Increase access to and opportunities for public enjoyment of the Town's natural resources while respecting the rights and concerns of private property owners.

Objective 9.4.1: Increase the Town's efforts to educate the public about the benefits of trail systems and the responsibilities of trail users.

Strategy 9.4.1.1: Publish results of trail inventories produced by the Trails Committee and make the trails information available to townspeople. Include information about trail etiquette, in regards to protecting the environment and showing respect for public and private property and schools.

Strategy 9.4.1.2: Work with local trails, environmental and recreational organizations to lead guided walks, horseback or snowmobile trips, etc. and to organize trail maintenance days.

Strategy 9.4.1.3: Develop the Town trail system in a way that connects one trail to another, creating a seamless system through town. Both urban and rural types of trails should be provided and should respect residents' desires to have both motorized and non-motorized access to the Town's natural resources.

Objective 9.4.2: Assist landowners in understanding their rights, protections and obligations in regards to public access and preservation of natural resources, and encourage private landowners to keep land open and accessible to the public.

Strategy 9.4.2.1: Use all the outreach and education methods discussed above to instill in the general public an appreciation for the public access (including views) to land that many private landowners provide for public enjoyment, along with their responsibilities while using this access.

Strategy 9.4.2.2: Provide workshops and other opportunities for landowners to learn about and discuss natural resource protection, farm and forest management, renewable energy generation, public access, land preservation, estate planning, etc. Work with experts from local environmental organizations, land trusts, etc. on developing the workshops.

Strategy 9.4.2.3: Ensure that landowners who host trails used by the public are recognized by the Town and have their private property concerns (e.g. maintenance, liability and vandalism) addressed. The Town should seek ways to support the landowners in keeping the trails open to the public.

Goal 9.5: Create specific development review standards that will allow appropriate development to occur while protecting the Town's significant resources.

Objective 9.5.1: Continue the use of zoning, subdivision and health regulations to restrict development in unsuitable areas.

Strategy 9.5.1.1: Restrict or prohibit development on slopes greater than 15 percent and those areas affected by seasonal flooding or unstable soils.

Strategy 9.5.1.2: Carefully consider the density of development in locations with shallow soils and areas, which have a high or seasonally high water table.

Strategy 9.5.1.3: Continue to require proof, at development review hearings, that sufficient water and sewer capacity exists for development in accordance with Town and state guidelines.

Strategy 9.5.1.4: Require retention of vegetation or effective re-vegetation of areas vulnerable to erosion.

Strategy 9.5.1.5: Prohibit development in aquifer protection areas and near surface waters having the potential to introduce contaminants into the water supply.

Strategy 9.5.1.6: The Town should explore the ability of the Regional Planning Commission and/or other regional, state, and local entities to coordinate a joint public/private study to determine the location of the thrust fault lines in order to establish scientific findings regarding how those properties may be developed.

Strategy 9.5.1.7: Revise zoning bylaws to prevent visible development on ridgelines

Objective 9.5.2: Develop new stormwater treatment standards in the zoning and subdivision regulations and the Public Works specifications. Standards shall be flexible but comprehensive and designed to improve water quality in impaired waters and to minimize non-point source water pollution from new development in the Town.

Strategy 9.5.2.1: Minimize impervious areas in developments by encouraging shared parking and driveways for adjacent uses and by reducing the lengths and widths of new roads where feasible.

Strategy 9.5.2.2: Revise parking requirements to allow the use of pervious pavement, especially for peak parking needs, overflow, and special event parking.

Strategy 9.5.2.3: Increase canopy cover in areas with large amounts of impervious surface. Increase awareness of proper tree planting and maintenance methods to ensure that trees grow to maturity, where the largest benefits are derived.

Strategy 9.5.2.4: Where soil conditions allow, encourage the use of infiltration of stormwater, particularly from rooftops.

Strategy 9.5.2.5: Encourage the disconnection of roof drains from the stormwater drainage system.

Strategy 9.5.2.6: Discourage the plowing of snow into wetlands and streams.

Strategy 9.5.2.7: Encourage the use of rain barrels, as well as the capture of grey water – wastewater drained from sinks, tubs, showers, dishwashers, clothes washers, and other non-toilet sources – and promote its use by commercial and residential users alike.

Strategy 9.5.2.8: Develop and adopt stormwater management regulations that require new development and redevelopment in the Town to comply with applicable state Stormwater Management Rules. It may be appropriate to encourage higher impervious coverage ratios coupled with structural stormwater treatment measures in higher density growth area inside the sewer core.

Strategy 9.5.2.9: Encourage the use of best management practices to minimize erosion and sediment transport from construction sites and agricultural lands within the Town.

Strategy 9.5.2.10: Train Town staff and commissions to understand and apply best management practices in the development review process for water quality protection and preservation of other natural resources.

Strategy 9.5.2.11: In the C2 District, revise zoning requirements to include better consideration for conservation buffers/setbacks/easements.

Objective 9.5.3: Incorporate into the development review process recognition that natural resource values to be protected may differ inside and outside the sewer service area. Denser development is desirable within the sewer service area whereas low densities and rural patterns of development are to be preserved outside the sewer service area. Formulas for determining density should be revised according to the location of the project in the Town and the land capabilities of each individual site.

Strategy 9.5.3.1: Revise the Zoning and Subdivision Regulations to more specifically define the Town's significant resources inside and outside the sewer core. PUD requirements shall be refined to recognize the different goals of development in the urban/suburban and rural areas.

Strategy 9.5.3.2: Revise the Zoning Bylaws to allow the Town to grant density bonuses on sites inside the sewer core where development constraints are few, and to establish flexible development standards, where appropriate, for development projects that preserve significant natural resources.

Strategy 9.5.3.3: Revise the zoning and subdivision regulations to encourage flexible development standards, outside of the sewer core where significant natural resources are protected and options for rural land uses are maintained. Discourage the use of density bonuses in rural areas unless significant land preservation takes place.

Objective 9.5.4: Revise the Town's application process for development review to more clearly obtain compliance with the Town's goals for natural and cultural resource protection.

Strategy 9.5.4.1: Prepare information sheets for applicants that clearly explain the Town's natural resource protection goals and methods for mitigating the impacts of development.

Strategy 9.5.4.2: Adopt an application form for development review that requires applicants to explain how pertinent natural resource concerns will be addressed.

Strategy 9.5.4.3: Reinforce current efforts to negotiate the deeding of lands for conservation or easements to significant natural resources including the expansion of a trail network, as part of the development review process.

Strategy 9.5.4.4: Revise zoning, subdivision and public works regulations to create a system of incentives for preserving natural and cultural resources.

Strategy 9.5.4.5: Establish management plans for open space areas conserved through regulatory measures or acquisition to ensure that the natural resource values of the sites are retained.

Objective 9.5.5: Incorporate the natural resources management recommendation contained in the 2007 Natural Heritage Element Inventory and Analysis (NHEIA) into the zoning and subdivision regulations.

Strategy 9.5.5.1: Establish specific protection standards and buffer zones around vernal pools as depicted in the NHEIA.

Strategy 9.5.5.2: Conserve the significant upland communities as described in the NHEIA by developing conservation easements, purchasing development rights, and working with land owners on management plans or other proactive conservation efforts. Specific protective standards should be incorporated into the zoning and subdivision regulations.

Strategy 9.5.5.3: Incorporate into the zoning and subdivision regulations the management recommendations included in the NHEIA for the following wetlands in Essex: Browns River swamp, Lost Nation swamp, Winooski Oxbow wetlands, Saxon Hill swamp, Essex Center swamp, Westford swamp, Indian Brook wetlands, Alder Brook wetlands, and 68 Acres wetland. Specific protection standards should also be incorporated into the regulations.

Strategy 9.5.5.4: Incorporate into the zoning and subdivision regulations the management recommendations included in the NHEIA for all the Contiguous Habitat Units (CHU), including those with “core” habitat units and the smaller CHUs important to providing movement corridors. Specific protection standards should also be incorporated into the regulations.

11. LAND USE AND DEVELOPMENT

The previous chapters of this plan provided critical information for deciding the amount, location, type and rate of development that should occur in the Town of Essex in the future. This Land Use and Development section takes into account the opportunities and constraints outlined previously and sets forth where and how Essex might grow.

11.1 Existing Conditions

According to the 2008 Essex Open Space Plan, incorporated herein by reference, since 1990, the majority of the Town's population growth (91 percent) and housing development (85 percent) has occurred outside the Village of Essex Junction. During the 1990s the Town's population outside the Village increased, on average, by 86 new residents per year, while the number of new housing units increased by 73 per year.

The majority (68 percent) of new housing permitted in the Town since 2000 is townhouses and condominiums located in the sewer service area. Permit data indicates that since 2000 an additional 385 housing units have been approved outside the Village- including 260 condominium and townhouses within the sewer core. The amount of higher density housing being developed in this area reflects residential phasing requirement that target the sewer core for 80 percent of new housing; and also suggested that this area is now largely built out. The shift toward higher density multi-family housing also reflects increased market demand for smaller, more affordable units to serve both new households and an aging population – including more housing options for empty nesters and seniors.

Zoning regulations confine most new commercial and industrial development outside the Village of Essex Junction to planned growth areas served by municipal infrastructure. These include Essex Town Center – long planned for higher density by mixed residential and commercial development, and the Saxon Hill Industrial Park areas (RPD-I District) which are zoned and managed for both industrial development and open space protection.

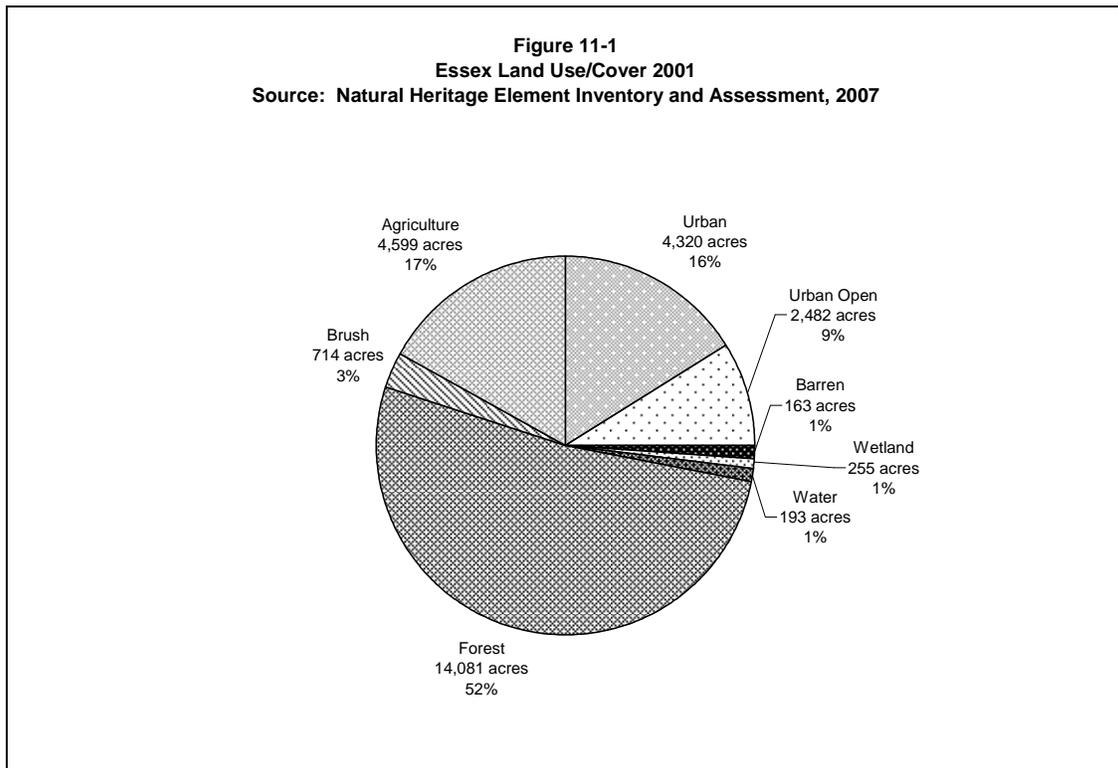
The Town's ongoing efforts to manage growth – its plans, policies, land use regulations, allocation ordinances, and investments in public land and infrastructure – have well served both the community, and the Town's remaining open land.

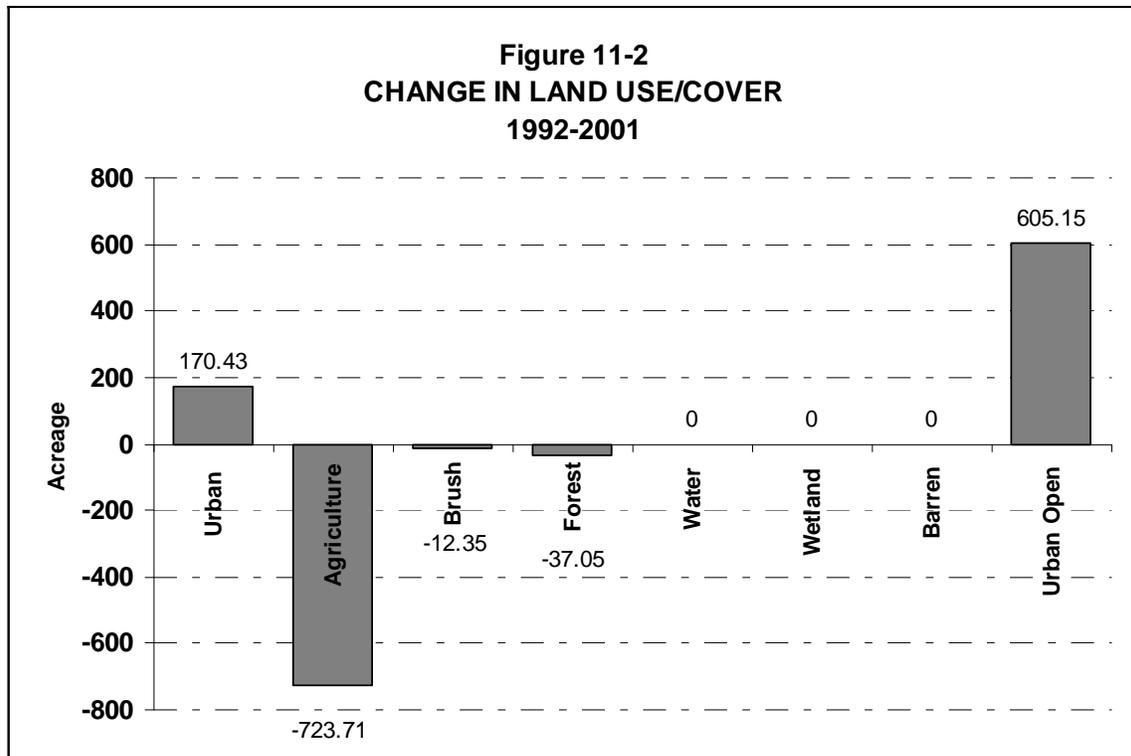
The trends in land use development, however, have resulted in the following impacts:

- The continued subdivisions or “parcelization” of open land which results in increasingly fragmented land ownership, management and use.
- The conversion and abandonment of farm and forest land to other use – mostly large lot residential development.
- The ongoing encroachment of development into environmentally and visually sensitive areas.
- For these reasons, it is important for the Town to carefully evaluate all planning areas to determine if current goals and objectives align with where Essex desires to see its residential,

commercial, and industrial growth for years to come. Discussions may take into consideration planned growth, economic development, preservation of open space and scenic corridors, preservation of prime agricultural lands and the general rural character of much of Essex.

The Town of Essex remains largely underdeveloped if measured only by land cover. A University of Vermont analysis of 2001 satellite data shows that roughly 52 percent of the Town is forested, 17 percent is in agriculture and 25 percent is developed at visible “urban” densities of development, as seen in Figure 11-1. A comparison of these data to the 1992 data however, suggests that during this period the Town has lost an average of 72 acres of forestland to development each year, as seen in Figure 11-2.





Source: Natural Heritage Element Inventory and Assessment, 2007

Table 11-1 helps illustrate the changes, which have occurred in the Town’s land use. Analysis of the parcels making up the Town’s Grand List shows that land devoted to all residential housing in proportion to total land area in the Town was about 57 percent in 2009. Comparing this figure with previous Town Plans shows a 12 percent growth in the total area of land used for all residential housing from 1977 to 1990, 16 percent growth from 1990 to 2000, and an additional eight percent from 2000-2009.

Map 21, *Existing Land Use*, depicts the generalized pattern of land uses in the Town. Noteworthy features include the large portion of the Town that is forested, the significant corridor of agricultural lands east of Old Stage Road and another between River Road and the Winooski River, and the concentration of residential, commercial, and industrial development in the southern portion of the Town (outside of the Village). This latter observation is reinforced when the dense patterns of the Village are considered.

The rate of growth in commercial acreage was high with 173 percent growth from 1977 to 1990; 48 percent growth from 1990 to 2000; and an additional 21 percent from 2000 to 2009. Industrial acreage grew by 81 percent from 1977 to 1990; by a much lower 17 percent from 1990 to 2000, but grew by an additional 50 percent from 2000 to 2009. In 1977, less than one percent of the Town’s land was allocated to each of the commercial and industrial land use categories. That share rose in 2009 to five percent for commercial uses and rose to 1.7 percent for industrial uses.

	1977			1990			2000			2009		
	Units	Acres	% Total Land	Units	Acres	% Total Land	Units	Acres	% Total Land	Parcels	Acres	% Total Land
Residential	1858	8172	36.8	2718	9190	41.5	3633	10694	48.3	3703	11584	56.9
Commercial	38	NA	0.9	340	544	2.5	346	807	3.6	194	1024	5.0
Industrial	5	85	0.4	14	153	0.7	17	179	0.8	16	361	1.7

Source: Town of Essex Community Development Office, Grand List

The expanding use of land for housing and business growth has been at the expense of open space: multi-acre holdings of residential land, farm land, and wooded countryside. In 1977, 5,270 acres (24 percent of the land supply) was shown to have been in farm use. That acreage was significantly reduced by 2009.

It should be emphasized that the results from this summary of land use are most valuable when viewed in terms of the relative changes that are exhibited: general shifts in the use of residential land from one density to another, and categories of growth or loss. Actual numbers should be used with care and discretion as methods and the precision of recording the information have varied from one collection period to another.

Because of variations in the methods of recording information and in the actual definition of other types of land use (and non-use) over this time period, it would not be valid to make comparisons in the other categories of land use.

11.2 Description of Planning Areas

In looking at the diversity and extensive land area that make up Essex, the Planning Commission has divided the Town into distinct planning areas – Fort Ethan Allen, Essex West, Neighborhood Growth Centers, Saxon Hill, the Highlands, the Lowlands, the Winooski River Corridor and the Town Center area, made up of several sub-areas known as Butlers Corners/Lang Farm and Essex Center. Map 20, *Planning Areas and Neighborhoods*, depicts each of these areas. This approach provides a location-specific means for addressing the unique set of circumstances found in the different regions of Essex. The following lays out a specific vision for each of these planning areas by identifying goals and objectives for accomplishing the vision.

Fort Ethan Allen

Fort Ethan Allen is an historic complex of buildings providing industrial, institutional and residential uses in a unique setting on VT Route 15. In 1987, the Town designated this area as a design control district to enhance the rich cultural heritage of the Fort and to minimize the threat of demolition or substantial character alterations of the many historic structures within the area. The large open area in front of Officers' Row is known as the Parade Grounds and is zoned for recreational uses only. The Parade Grounds, located both in Essex and Colchester, have significant recreational and

aesthetic value not only for the two towns, but for the entire region. They are integral to maintaining an aesthetically pleasing gateway to the Town and for providing an essential visual break in the built-up areas along VT Route 15.

The Fort property is under the ownership of the University of Vermont, St. Michael's College and private land holders. It also lies within the towns of Essex and Colchester. The proximity of the Circumferential Highway and other major commuter routes will make this area especially attractive for increased development. Planning efforts should recognize the Fort in its entirety in order to coordinate future development.

Goal 11.1: Preservation of the historic, cultural, and visual qualities of Fort Ethan Allen.

Objective 11.1.1: Retain designation as a historic district of local, state and national significance.

Objective 11.1.2: Expand Design Control District to encompass the entire Fort area to preserve existing buildings and ensure architectural compatibility of renovations, alterations, and new construction. Although individual sections of the Fort have distinct uses, zoning and design controls should treat the entire area as one cohesive unit.

Objective 11.1.3: Maintain the Parade Grounds as open space, as affirmed by the 2008 Essex Open Space Plan.

Goal 11.2: Coordinate planning of the Fort with the Town of Colchester to ensure it develops as a cohesive neighborhood.

Objective 11.2.1: Implement the "Fort Ethan Allen Master Plan Study", 1988.

Objective 11.2.2: Ensure that Essex and Colchester zoning provisions are mutually compatible.

Goal 11.3: Encourage economic growth and diversity of uses within the Fort.

Objective 11.3.1: Provide infrastructure to foster economic development.

Objective 11.3.2: Modify zoning to allow more commercial and industrial uses in appropriate locations.

Objective 11.3.3: Improve pedestrian traffic patterns via links from the Fort to Susie Wilson Road and Kellogg Road. Evaluate options, which may include a pedestrian bridge connection to the westerly end of the abutting shopping center.

Essex West

The Essex West area is bounded by Fort Ethan Allen to the south, the Town of Colchester on the west, Gentes Road and the Tree Farm soccer facility to the north and the Village of Essex Junction on the east. Although it is somewhat isolated from the rest of the Town outside the Village, this area is almost a self-contained community with its diversity of uses, a mix of housing opportunities and direct access to major transportation routes.

Essex West currently contains five different zoning districts including an Industrial Zone, a Retail Business Zone, a Medium Density Residential Zone, a Mixed Use Development Zone and an Open Recreation district which includes the Tree Farm soccer facility, now owned by the Town. It also provides several gateways to the community from VT Route 15, VT Route 2A, Kellogg Road, and the Circumferential Highway.

With construction of only the Essex portion of the Circumferential Highway, this area has experienced a significant increase in development pressure. Susie Wilson Road has become one of the primary commuter routes in Chittenden County because it provides a direct connection to the

Highway from VT Route 15. A report was prepared for the Town by Lamoureux and Dickinson, Consulting Engineers, in May 2000 entitled “Susie Wilson Road, Capacity and Access Management Study”. The report recommends that the Town consider such measures as general access management standards, specific driveway relocation or consolidation, removal of certain high traffic generating uses from the list or permitted uses, development of performance standards to limit traffic generation, and encouragement of demand management incentives. A follow-up “scoping report” is pending that will specifically identify work elements to address existing and anticipated traffic issues. In 2004 the Selectboard received a report from the Susie Wilson Road Study Committee, which recommended zoning changes to allow higher densities, mixed uses, and additional lot coverage.

Goal 11.4: Encourage the development of the Essex West area as a subregional growth center which will provide greater employment opportunities, broaden the tax base, increase retail and personal services and provide a diversity of housing opportunities.

Objective 11.4.1: Evaluate vacant land in the area for use as potential affordable housing sites.

Objective 11.4.2: Encourage a variety of housing types that will benefit from proximity to employment opportunities, shopping, and transportation infrastructure including bus routes.

Strategy 11.4.2.1: Specific Zoning Recommendations: Change zoning for existing non-residential districts that are appropriate for residential use – the I1 district northeast of VT Route 2A and the Circumferential Highway. The area east of the rail line should be Agriculture-Residential. The area west of the rail line should be Mixed Use.

Objective 11.4.3: Maintain transition zones and buffer strips to prevent encroachment of commercial/industrial uses into residential districts.

Goal 11.5: Plan for the expansion of needed facilities and services to support this area’s potential for future growth.

Objective 11.5.1: Implement appropriate measures from the Susie Wilson Road, Capacity and Access Management Study and subsequent recommendations of the follow-up scoping analysis.

Objective 11.5.2: Upgrade deficient bridges and railroad crossings on Old Colchester Road and Gentes Road.

Objective 11.5.3: Facilitate the extension of municipal water along the length of VT Route 2A to the Town line.

Objective 11.5.4: Facilitate the provision of municipal sewer to the Painesville Manor area.

Objective 11.5.5: Work toward providing pedestrian and vehicular links to the Village in the Pinecrest Drive area.

Objective 11.5.6: Complete construction of sidewalks along Susie Wilson Road, Kellogg Road and Pinecrest Drive.

Goal 11.6: Ensure a well integrated, aesthetically pleasing mix of uses.

Objective 11.6.1: Revise Zoning Bylaws to ensure that development along VT Route 2A, VT Route 15 and Kellogg Road is subject to landscape and site design review criteria to create a unified treatment of existing and future development. These areas function as gateways to the community and their appearance is extremely important.

Objective 11.6.2: Restrict access to the arterials and major collectors to ensure safe, functional and efficient travel.

Objective 11.6.3: Re-evaluate the setback and landscaping requirements for the Mixed Use Development District along the Pinecrest Drive area to ensure that as sites are developed for non-residential purposes, they are compatible with the existing residential uses.

Goal 11.7: Protect and enhance existing natural features.

Objective 11.7.1: In accordance with recommendations in the 2008 Essex Open Space Plan, establish a trail network and green belt along Sunderland and Indian Brooks with connections provided adjacent to residential developments. Any trail system development occurring along these stream banks must be done sensitively given the fragile nature of these areas.

Objective 11.7.2: Establish a conservation/buffer zone on either side of Indian and Sunderland Brooks.

Neighborhood Growth Centers

The areas immediately adjacent to River Road, Sand Hill Road, VT Route 15 and the Village/Town boundary have historically been the Town's residential growth centers. Because of past policies and regulations, nearly half of all homes in Essex are located on neighborhood streets as opposed to major roads. Neighborhoods are important for creating a sense of community and therefore, future growth should be encouraged to maintain this development pattern. Town services, including schools, adequate streets, sidewalks, sewer, water and recreation facilities should be provided where needed to support these land uses.

The neighborhood growth centers are located within the Town's sewer service area. As undeveloped land inside the sewer boundary becomes scarcer, additional development or redevelopment can be considered in neighborhood growth centers. However, any such development should not be allowed to alter the essential character of the existing neighborhood.

Goal 11.8: Promote a human dimension to development that will enhance a sense of community.

Objective 11.8.1: In accordance with the 2008 Essex Open Space Plan, encourage provisions for greenbelts, open space and recreational amenities within new residential developments.

Objective 11.8.2: Encourage vehicular and trail connections between old and new development, but take into account impacts on the character of the neighborhoods.

Objective 11.8.3: Encourage affordable housing to allow for a wider income mix of residents within Essex.

Objective 11.8.4: Evaluate residential street improvements to determine if they meet neighborhood goals, traffic safety and functional classification requirements.

Objective 11.8.5: Enlist the assistance of residents in public safety programs (Neighborhood Watch, McGruff House) and in maintenance of neighborhood parks.

Goal 11.9: Encourage innovative neighborhood concepts.

Objective 11.9.1: Provide flexibility within the zoning and subdivision regulations to allow consideration of concepts such as, but not limited to:

- a. Zero lot line development;

- b. Congregate and group housing;
- c. Higher densities for multi-family dwellings;
- d. Vertical construction through increased height allowances tied to increased setbacks;
- e. Expanded use of accessory apartments.

Objective 11.9.2: Evaluate zoning and subdivision regulations to allow density bonuses in order to promote and encourage development within neighborhood growth centers.

Objective 11.9.3: Promote Planned Unit Developments – Residential (PRD-Rs) as a means of providing affordable housing through decreased infrastructure costs, open space, and green belts within developments.

Goal 11.10: Encourage development within existing neighborhood growth centers to ensure the efficient provision of municipal services.

Objective 11.10.1: Through the subdivision process, provide for interconnections between adjoining neighborhoods.

Objective 11.10.2: Continue to require two or more points of ingress/egress for large developments.

Objective 11.10.3: Encourage access for new development that connects directly to major streets without causing increased traffic on existing minor residential streets.

Objective 11.10.4: Minimize curb cuts on major collector roads.

Objective 11.10.5: Encourage provisions for greenbelts, open space and recreational amenities within new residential development; encourage trail connections between old and new developments.

Saxon Hill

The Saxon Hill area has long been considered a resource to be preserved. The area consists of a forest and four ponds formerly used as a public water supply. Of educational, historical and commercial (logging) value, the Saxon Hill forest serves as a prime example of intensive forestry management and the function of forestry in reclaiming poor soils and maintaining a watershed. The recreation potential of this area has long been affirmed and is addressed to greater detail in the Parks and Recreation chapter.

In 1977, a major portion of the area was designated a Resource Preservation—Industrial District. The specific objective of the RPD-I District is to “protect...natural attributes for public enjoyment and when it is deemed economically and aesthetically feasible, to carry out economic development activities in harmony with the natural surroundings.” Limited, well-planned industrial and office uses are considered a compatible use within this area for several reasons. The forest itself provides a suitable buffer for neighboring residential developments. In addition, this area offers many of the characteristics which are desirable for such uses: level terrain, well-drained soils, proximity to transportation routes and availability of utilities.

Since 1977, a number of industries have chosen to locate in Saxon Hill Forest. As this area has evolved, a number of issues about its future use and management have been raised. The Town has agreed that 60 percent of the land should be kept in open space; 25 percent can be developed for industrial uses and the remaining 15percent shall be retained for recreation/conservation use until

and unless the Planning Commission deems it necessary to allow industrial or office uses in all or part of that portion.

The 2008 Essex Open Space Plan recommends that natural amenities for public enjoyment be protected and that fixed boundaries for conservation and development be established.

Goal 11.12: Promote a diversified and stable economy by encouraging compatible industrial development and assuring the successful operation of existing industries in the Saxon Hill Industrial Park.

Objective 11.12.1: Ensure that uses in the park are primarily light industrial and large-scale uses. Limited commercial support services should be allowed in a very minor portion of the park.

Objective 11.12.2: Ensure that residential uses are not allowed in the RPD-I District.

Goal 11.13: Protect the natural attributes of the RPD-I District for public enjoyment and, when it is deemed economically and aesthetically feasible, carry out economic development activities in harmony with natural surroundings.

Objective 11.13.1: While maintaining the 60/40 split reserved for recreation/conservation uses, the Town should work with the landowner to establish fixed boundaries of land to be considered for development and land to be protected for recreation/conservation use.

Objective 11.13.2: The Town shall evaluate options to purchase or otherwise permanently preserve 60 percent of large contiguous sections of the RPD-I District.

Objective 11.13.3: Enhance the importance of the major points of entry to the park and take steps to maintain them.

Objective 11.13.4: Retain the 200-foot buffer requirement between residential areas and along Route 15 and Sand Hill Road. The Planning Commission should evaluate the need for and the size of buffers between other industrially-zoned properties.

Objective 11.13.5: Ensure that recreation/conservation areas are effectively managed and clearly establish the responsibility for such management.

Objective 11.13.6: Consider the addition of color standards or other regulations to the RPD-I District to ensure building and accessory use designs that are in harmony with the natural surroundings.

Goal 11.14: Assure the provision of adequate infrastructure to support the existing industries and the build-out of the industrial park.

Objective 11.14.1: Encourage the provision of improved public transportation to this area to minimize land area needed for parking lots and to reduce traffic.

Objective 11.14.2: Encourage the developer of the park to develop a transportation system management plan (TSM) which outlines a range of options to decrease vehicular trips to the park, including:

- a. Car pooling;
- b. Park and Ride facilities;
- c. Public transportation;
- d. Incentives for multiple occupant vehicle use;

- e. “Transit passes”.

Objective 11.14.3: When segments A and B of the Circumferential Highway have been completed and connected to the existing segment, efforts should be focused on scoping studies aimed at mitigating the corresponding traffic impacts along VT Routes 15 and 117. Part of the scoping effort should be on the completion of the connection of Allen Martin Parkway to the Circumferential Highway.

Objective 11.14.4: Extend municipal sewer to allow high water usage industries.

Objective 11.14.5: Consider allowing the reallocation of a small portion of the existing sewer allocation for the RPD-I and abutting industrial districts if it is determined that the remaining allocation will be sufficient to serve anticipated development for a 20-year planning period.

Objective 11.14.6: Review the existing road infrastructure to ensure adequate connectivity and emergency access at full build-out at the industrial park.

Goal 11.15: Better manage the Saxon Hill area for its recreational and resource value.

Objective 11.15.1: The Town Parks and Recreation Department should work with the developer to establish a trail management plan which addresses on-going maintenance, trail signage, better policing of trails to eliminate motorized vehicles, illegal dumping and protection of deeded easements for multi-use trails.

Objective 11.15.2: Undertake educational efforts to make the public aware of Saxon Hill and enlist their assistance in trail maintenance.

Objective 11.15.3: Organize and promote public events such as cross country ski races, mountain bike races, foot races, orienteering competitions, nature walks, etc. to increase the use of the park. Area fitness clubs and interested residents should be encouraged to coordinate such events.

Objective 11.15.4: Establish a hiking trail connecting the Winooski River to the top of Saxon Hill with an overlook tower to be developed.

Objective 11.15.5: Re-evaluate the Forest Management Plan with the Tree Warden to assure it is being implemented.

Objective 11.15.6: Initiate discussions with the Essex Junction School District regarding future use of their 90-acre parcel and include it in an overall management plan for the forest.

The Highlands

More than 20 percent of the Town’s land area can be described as “Highlands” or those areas having steep slopes and high elevations. These include Brigham Hill (elevation 1,032 feet), Bixby Hill (elevation 666 feet), Saxon Hill (elevation 807 feet), and the Osgood Hill Road and Sleepy Hollow Road areas. The Town has appropriately designated the majority of these areas as conservation zones with a minimum of 10 acres required for residential use. The two largest conservation areas extend from the northwestern and northeastern corners of the Town. They have in common soils ill-suited for anything but low density development, large tracts of productive timber, remoteness from public services and transportation arteries, and light, scattered development. The Saxon Hill areas extending from the Jericho Town line to Sand Hill Road are unique planning areas described previously.

These areas are important for wood production, aquifer recharge, wildlife habitat, recreation, erosion control and aesthetics. They also provide an alternative residential development pattern for those

interested in housing located in more remote areas than the higher density zones closer to Town services and facilities. The challenge is how to preserve the integrity of the fragile natural resources in the area.

Goals and objectives for the highlands are presented in Section 11.3, Rural Lands.

The Lowlands

The Town of Essex is drained by three river basins—the Winooski and Lamoille Basins and a small area drained by Indian Brook and Sunderland Brook, which flow directly to Lake Champlain. The Brown's River and Abbey Brook drain the northeast section of the Town and flow into the Lamoille River, while Alder Brook is the principal drainage into the Winooski River. These water resources and their associated floodplains and wetlands influence the distribution of other low lying open land types identified in the "Open Lands Study" completed for the Town in 1989. For example, the distribution of floodplains closely aligns with the availability of prime agricultural soils. These in turn represent the Town's most visually sensitive areas. The fact that development in the floodplain is prohibited explains the continuing presence of open land, particularly along the Browns River and Alder and Abbey Brooks. Similarly, the pattern established by the Winooski River and stream and brook tributaries is reflected in the networks of recreation areas and proposed trails that the "Open Lands Study" identified.

Despite a major portion of the low lying areas in Essex being protected via floodplain regulations, there is a significant area which is vulnerable to development. The Lost Nation Road area and the area west of VT Route 15 have become particularly attractive because of the proximity of two new intersections for the Circumferential Highway. Similarly, agricultural lands are attractive for development given the lack of physical constraints for same. The 1977 Town Plan identified 16 active farms in Essex. In 1988, there were five active farms including one located in the Village participating in the Farm Tax Contract. In 2004, there were nine farms in the program. The rest of this area is used for low density housing.

The zoning for this area is intended for agricultural, forestry, rural housing, recreation and resource protection purposes. Significant open land resources that should be protected in this district include:

- a. Prime farm lands;
- b. Prime forest lands;
- c. Scenic vistas and views;
- d. Trails having local and statewide significance identified by the Vermont Association of Snow Travelers (VAST), the Winooski Valley Park District (WVPD), and the Chittenden County Regional Planning Commission (CCRPC);
- e. Floodplains, wetlands, and water bodies.

These resources are shown on the maps included in the Open Lands Study. Because a major portion of the lowlands area is overlain by these significant features, the purpose of the zoning districts in the area is to protect and wisely manage these valuable natural resources through the careful placement of housing with respect to these resource lands and the establishment of open space requirements.

The challenge for the Town is to work with the owners of these important open lands to encourage their long-term maintenance. The 2008 Essex Open Space Plan re-affirmed the following goals for this planning area.

Goal 11.16: Protect the integrity and quality of existing water courses and wetland areas.

Objective 11.16.1: Ensure that development in floodplain areas is avoided.

Objective 11.16.2: Require development to be setback from streams, drainage ways and wetlands to minimize the impairment of same.

Objective 11.16.3: Retain the current low density and type of uses allowed in the area.

Objective 11.16.4: Do not extend municipal water and sewer into these areas except for conditions of compelling need to maintain the public's health.

Goal 11.17: Wisely manage the natural resources through careful placement of housing and the establishment of open space requirements.

Objective 11.17.1: Review Town policies on community waste water disposal systems and private roads and revise as needed.

Objective 11.17.2: Amend zoning and subdivision regulations to implement the recommendations in Section 11.3, Rural Lands and to establish specific standards for natural resources protection.

Objective 11.17.3: Consider implementing Conservation Design Subdivision regulations to preserve natural resources and open space.

Winooski River Corridor

The Winooski River Corridor provides one of the more spectacular natural and recreational areas in Essex. Within the Corridor are to be found fast water, secluded groves, vistas of riverscape and mountains, wild flowers and unique natural areas. However, this area is known and frequented by only a small number of people as access to it is unimproved or difficult and the water quality is poor in certain areas.

The Town is a member of the Winooski Valley Park District, a union municipal district comprised of the communities bordering the lower Winooski River Valley. The purpose of the District is to acquire and manage park lands, to protect open space and access to the Winooski River, and to provide passive recreational opportunities on lands within its seven member towns. Other than participation in the district, the Town has not worked to improve access or water quality in recent years. With increasing demands on the river for hydroelectric power and wastewater treatment and as a recreational and natural resource, the Town should refocus its efforts to assure its future use does not compromise one of these uses over another.

Goal 11.18: Revise Zoning and Subdivision Regulations to ensure that review of development proposals and future planning efforts includes consideration of access to and along the Winooski River Corridor in order to take better advantage of its importance as a natural resource. The 2008 Essex Open Space Plan re-affirmed the objectives listed below.

Objective 11.18.1: Develop a bicycle/walking path along the entire corridor to connect the Burlington bike path to a bike path running along the Circumferential Highway and looping back to the mouth of the Winooski River.

Objective 11.18.2: Develop a spur trail to an overlook tower and picnic area on the top of Saxon Hill.

Objective 11.18.3: Preserve the oxbow near the bottom of Sand Hill Road as a natural area and outdoor laboratory.

Objective 11.18.4: Work with Winooski Valley Park District to upgrade the remainder of “68 Acres” as a walk-in park with parking established near the Woodside facility.

Objective 11.18.5: Develop canoe launch areas in strategic locations.

Objective 11.18.6: Encourage ecologically sensitive vegetable/fruit farms along the river’s banks via tax stabilization and regulatory measures.

Objective 11.18.7: Renew interest in the river as an amenity via public education and marketing, and by sponsoring canoe treks, hikes, and green-up days.

Objective 11.18.8: Promote annual “green-ups” of the corridor using civic groups, Scouts, and Correctional Center residents.

Objective 11.18.9: Encourage private owners of property along the river to “adopt” a portion of the Winooski River by maintaining their frontage and keeping it free from debris.

Town Center

In the 1990 Town Plan public forum, residents overwhelmingly expressed a need to maintain a sense of community and pride in the place they live. The historic Essex Center area was identified as an essential element in achieving this goal and was pointed to as a focus in the community worthy of preservation. A Land Use Committee, charged with formulating a vision for the future land use of Essex, recommended that a Town Center be developed. According to the Committee, the Town Center should be pedestrian-oriented and contain a mixture of residential, commercial, civic and cultural opportunities. The center should be separated from other settlements by open lands.

The call for a Town Center, as a focus for growth and a center for community life, led the Town to conclude that a plan was needed to identify where the center should be and how it should be developed.

Through the town-wide surveys conducted for the 1991 Town Plan and subsequent plan updates, the work of the Essex Land Use Committee, and a public design workshop on the new Town Center, a set of goals for the Town and for the Town Center was established. These goals have guided the design process throughout and were re-affirmed in the 2008 Essex Open Space Plan.

Town-wide Goals

1. Involve citizens in planning.
2. Promote growth in compact centers.
3. Develop a Town Center.
4. Preserve significant features.
5. Prohibit strip development.
6. Plan for growth both with and without the Circumferential Highway.
7. Service growth centers with adequate infrastructure.
8. Pace growth with the market and Town services.
9. Provide for a rural/private lifestyle and encourage the location of neighborhoods near growth centers.

10. Encourage non-motorized, multi-use paths.

Goals for the Center

1. Provide a separation between built-up areas and countryside.
2. Provide a human scale for development.
3. Promote a settlement pattern that:
 - a) enables mixed uses,
 - b) has compact commercial development, public services, and residential development at higher densities, and
 - c) protects major open spaces and views.
4. Incorporate a pedestrian/bikeway network.
5. Provide for alternative transportation systems.
6. Identify new routes to better serve the center.
7. Provide for affordable housing.
8. Amend regulations to carry out goals.
9. Enable growth at both the Town Center and historic Essex Center, but in different ways.
10. Control development of the VT Route 15 corridor between Butlers Corners and historic Essex Center.

A build-out analysis was prepared in 1991 showing what the historic Essex Center, “Golden Triangle”, Butlers Corners and Lang Farm area would look like under the then current zoning and subdivision regulations and development trends. These areas were chosen for study because of their current as well as historical focus as centers of community growth and activity. The results of the build-out analysis were startling. The current regulations were clearly leading the Town in a direction that people did not want to go. The build-out plan showed that:

- Instead of compact settlements surrounded by rural countryside, there would be sprawl.
- Instead of mixed-use developments, projects would contain only one major type of use.
- Views that citizens identified as being important would be obstructed.
- Higher density housing would not be possible.
- There would be strip commercial development along Center Road.
- Neither a pedestrian-oriented center nor public transit would be facilitated by the plan.

As a result of the build-out plan, a new design for the Town Center was developed based on the goals for the Town and the center, the results of three public design workshops, and the guidance of the Town Center Master Plan Advisory Committee, the Planning Commission and the Selectboard. The Town Center Master Plan (April 1991) prepared by Humstone Squires Associates was incorporated by reference into the 1991 and 1996 Town Plans and continues to guide development in the Town Center. The designs, standards and recommendations from the Town Center Master Plan should be considered in the review of future development plans for this area, but the Planning

Commission may permit modifications if in conformance with the overall goals and objectives of this Town Plan.

The Town Center Master Plan reinforces the goal of compact settlements surrounded by rural countryside through the preservation and improvement of the quality of open space and the enhancement of settled areas. The plan offers the Town of Essex lively, mixed-use centers for community life in close proximity to greenways, trails, recreation land, forests, and farmland. With the plan, the Town has a focus for new development and a wide range of activities. People can walk to the store and post office, a friend's house, their job, or a park. Nearby trails wind through deeply wooded areas or alongside a brook. Beyond there are vast expanses of protected wetlands, forest land and open meadow land.

In the Butlers Corners area, historic buildings are to be retained as prominent features within the greenway. Progressing eastward, the VT Route 15 greenway becomes a broad, tree-lined boulevard adjacent to existing and in-filled residences. The VT Route 15 boulevard will continue to Historic Essex Center where it will be scaled down to fit within the existing buildings and historic character of the area. While some commercial development will be permitted along VT Route 15 between Butlers Corners and Essex Center, it will be limited in scale. Controls may include building design guidelines or restrictions on high-traffic generating uses, such as gas stations and fast-food restaurants.

Essex Four Corners is defined as the cultural center of the community. The vision is for a center in which civic spaces, cultural events, churches, community groups, pedestrians, artists and performers, and pedestrians thrive. A new common is envisioned whereby the existing common and Library lawn are renovated.

A new center is to be located at Butlers Corners and the Lang Farm. Here, higher density and mixed-use buildings will offer a variety of housing types within close proximity to shops, services, community facilities and places of work. A street network will provide a framework for development and promotes pedestrian circulation and public transit.

The scope and scale of commercial development in the Town Center will serve a market that extends beyond the Town of Essex. In addition to this major retail presence, the Town Center will be home to a number of other community-serving offices, retail shops and services.

Higher-density residential development will continue in the Town Center, either in combination with first-floor commercial development or in residential-only buildings in close proximity to non-residential uses. A new common will be established in the Town Center.

A secondary commercial and residential center, not specifically proposed in the final design concept of the Town Center Master Plan, is proposed here for the area west of VT Route 15, south of Lost Nation Road, and north of the Circumferential Highway as shown on Map 22, *Future Land Use*. High-density residential development will go forward only if, in addition to the sole planned VT Route 15 vehicular access at the existing traffic signal, a strong pedestrian connection is provided across VT Route 15 to the Town Center.

This secondary center also will allow for an expansion of the locally oriented commercial services that were originally expected to fill the former Lang Farm Retail Center and the Town Center area.

The development should be carefully designed and executed to preserve the rural/urban settlement pattern break proposed by the Town Center Master Plan. Of particular concern would be the size, scale, and orientation of proposed buildings and how the final appearance of this highly visible area

would be altered. The Business Design Control District should be extended to include the commercial development of this area.

Development in this area can probably be best accomplished through a Planned Unit Development that would allow proposed projects to address setbacks and other zoning regulations constraints with some flexibility.

Outside Butlers Corners/Lang Farm, Essex Center, and existing residential areas, development will be clustered and multi-unit dwellings discouraged so as to reinforce the concept of compact settlement surrounded by countryside, create more contiguous open space and preserve significant views. Additional analysis should be conducted addressing possible expansion of the sewer core area that enhances the Town Center. Such analysis must consider the consequences of additional growth and sprawl.

Implementation

The implementation of the new Town Center Plan has begun and will continue to take place over a long timeframe. The exact timeframe is unpredictable and will be dependent on the actions of the landowners, the Town's priorities as reflected in the Town Plan, Capital Budget and Program, changing fiscal conditions, and regional and local market conditions. The implementation of the plan began with its incorporation into the Town Plan. Regulatory changes have included revisions to zoning districts and district regulations and amendment of standards in the subdivision regulations.

Private development has begun in accordance with the 1991 The Town Center Master Plan and with the revised zoning and subdivision regulations. Other steps will include adoption of an official map that will show new streets, trails, public recreation areas, pedestrian easements, drainage ways, and public building sites. It will also provide a mechanism for public acquisition of these areas. The improvements will be financed by a combination of public and private mechanisms. The public investment will be phased according to the Town's Capital Budget and Program. Impact fees, public subsidies, special assessment districts and tax increment financing will also be considered. In addition, the 1991 Master Plan should be updated to include existing conditions and to validate local perspective of the Town Center. In 2004 the Selectboard received the report of the Town Center Study Committee, which recommended increased residential densities, increased proportions of residential in the residential to commercial mix, and underground or tiered parking. The 1991 Master Plan is long over due for a comprehensive update to examine densities, infrastructure funding, uses and design control.

11.3 Land Use in Outlying Areas

Rural Lands

Much of the Town's land use planning is focused on directing new development towards the Town Center and other planning areas within the sewer service area. A complementary planning goal is the prevention of excess development on rural land outside the municipal service boundary. As part of the preparation of this Town Plan, Burnt Rock, Inc. was hired to review recent development trends, to examine land use patterns and goals for the rural area, and to recommend regulatory and non-regulatory techniques to achieve those goals. Recommendations from the 2001 Essex Rural Land Study are provided below. These recommendations were re-affirmed in the 2009 Essex Open Space Plan:

Data and Information Collection

- (1) Significant headway on updating natural resources inventory was made with the 2007 Natural Heritage Element Inventory and Assessment, incorporated herein, and one by Arrowwood Environmental. The assessment recommended further and ongoing field work to map wetlands, vernal pools, and wildlife habitat.
- (2) Conduct a GIS, orthophoto-based inventory of land use and land cover, in addition to data layers comprised of natural resources identified in (1) above.
- (3) Undertake a survey of rural enterprises, including small farming operations, to document non-residential land uses within the rural area.

Regulatory Options

- (1) In accordance with the 2008 Open Space Plan, establish specific natural resource protection standards to apply to all development throughout the rural area districts. Such standards, adopted as part of the zoning bylaws, should include:
 - a. Setback and buffer requirements for streams and wetlands (minimum of 50 feet, preferably greater; could be relative to site conditions).
 - b. Steep slope standards (e.g., erosion control measures for all development on slopes of 15 percent or greater; possible prohibition of development on slopes of 25 percent or greater). Such a standard would be an expansion of existing slope limitations related to the construction of septic systems.
 - c. Specific standards to protect water supply source protection areas to ensure that development does not result in groundwater contamination.
 - d. Definition and delineation of ridgelines, on which inappropriate development activities could adversely affect the town's scenic landscape, and adoption of appropriate development standards either to prohibit development in those areas or to mitigate the environmental and visual impacts of development.
 - e. Preservation of open space whenever land development is proposed.
 - f. Increasing lot size requirements (e.g., amending Agriculture-Residential zoning district from 3 acres to 5, 10 or greater).
 - g. Undertake a Comprehensive Growth Management Program, including allocation ordinances and subdivision regulations that direct 80 percent of new development to the Town's sewer core area.
 - h. Consider adopting Conservation Design Subdivision regulations to better protect open space in the more rural areas in the Town.
 - i. Establish minimum open space standards for subdivisions and higher density development within the sewer core, i.e.: re-establish a 15 percent open space requirement for neighborhood parks and playgrounds.
 - j. Strengthen the role of the Conservation Committee in the development review process.
- (2) Revise Planned Unit Development-Residential provisions to encourage greater use. Such revisions could include:

- a. Providing additional incentives (such as increased density and/or the elimination of standards that are more restrictive than conventional subdivision standards).
 - b. Including specific standards regarding the preservation of open space. Such guidelines should describe the features to be protected as open space, the area and configuration of land to be dedicated as open space, and the legal mechanisms for dedicating open space.
 - c. Reducing existing road standards (perhaps to allow private roads in exchange for a high quality of site design and/or the preservation of open space. Related to revised road standards, a minimum requirement for PUD-Rs might include a standard that the pre-development parcel has a minimum frontage on an existing public road of between 500 and 1,000 feet to discourage residential developments on large parcels that lack frontage. Such a standard should be coordinated with the policies regarding the extension or creation of new public roads. Reduction of road standards should not allow a greater number of lots than could be approved under conventional subdivision design.
 - d. Review administrative procedures to ensure that the review process and application requirements are, at minimum, no more cumbersome than the requirements for conventional subdivisions.
 - e. Preservation of open space whenever land development is proposed.
- (3) Subdivision regulations should be revised to provide better protection of natural resources and to ensure that future development patterns in the rural areas are consistent with the area's rural character and landscape. Such revisions should include:
- a. Strengthening natural resource protection standards to address streams, steep slopes/ridgelines, wildlife habitat and scenic areas (e.g., requiring house placement/building envelope in the middle-ground of view sheds to avoid placement in the foreground and background).
 - b. Establishment of a Conservation Subdivision Design requirement that requires the identification of prominent site features (farmland, steep slopes, etc.) and the preservation of those features through designation as open space prior to house siting, lot configuration, and road layout. Designated building envelopes should be required on all lots to limit the extent of area in which development of homes and related improvements could take place.
 - c. Consideration of adopting performance standards to determine project density (e.g. wetlands, slopes in excess of 25percent, etc. might be eliminated from density calculations).
 - d. Requiring cluster design, whether in conventional subdivisions or Planned Unit Developments-Residential, as needed to avoid adverse impacts on lands identified on the Significant Features Resource Map.
- (4) In addition to regulatory revisions described above, it is important that the following existing regulatory provisions be continued:
- a. The C2 zoning should be maintained in its present form, except as may be modified under (1) and (2) above.
 - b. Existing phasing policies should be continued, with revisions only to reflect current growth projections.

Non-Regulatory Options

- (1) Seek the assistance of private, non-governmental land conservation organizations (e.g., Vermont Land Trust) to further local land conservation priorities and encourage voluntary protection options (e.g., donation of conservation easements).
- (2) Consider the creation of a local open space conservation fund, in combination with available state and federal matching funds, to protect open space through purchase of land or interest in land (e.g., conservation easements, trail easements).
- (3) Review the Town's existing tax stabilization program and consider opportunities for expanding or strengthening that program.
- (4) Establish a formal public land acquisition and stewardship program, to be managed by the Selectboard in consultation with the Conservation Committee.
- (5) Undertake other non-regulating measures to conserve open space, including additional field inventories and natural resources mapping; a survey of owners of remaining farm and forest parcels; a mapping and analysis of local watersheds; considering expansion of the Essex Farm and Open Land Tax Abatement Program; encourage community support programs such as "Buy Local," and additional updating of the Significant Features Map.

11.4 Proposed Land Use

Map 22, *Future Land Use*, shows the anticipated patterns of development for the Town outside of the Village. The following are more specific descriptions and purposes of each designated area.

Conservation (C1): The purpose of the Conservation Area is to protect the sensitive natural resources and steep slopes which make these areas inappropriate for intensive development. These areas are remote from municipal services and facilities and lack accessibility. Low density residential and related uses are permitted in this district only if applied to a land unit of ten acres or more.

Floodplain (C2): The purpose of the Flood Plain Area is to reduce the potential for damage from flooding; to protect streams and water courses for erosion, siltation and pollution; and to protect the natural ecology of stream beds and lands adjacent to water courses. In these areas, no building is permitted and excavation, fill, disruption of vegetative cover or other encroachment is restricted.

Open Recreation (O1): The purpose of the Open Recreation Area is to protect the natural resource value of publicly owned lands which are essentially undeveloped; lack direct access to public roads; are important to wildlife and wildlife habitat; have high potential for commercial forestry use; are unsuitable for land development, or include irreplaceable, limited or significant natural, recreational or scenic resources. No public sewer and water facilities are planned for these areas. Due to the limited facilities and services proposed for the district and the critical resources located within it, only limited recreation uses, conservation uses and forestry which are compatible within the district purposes, and do not require additional facilities and services, will be encouraged.

Agriculture/Residential (AR): The purpose of the Agriculture/Residential Area is to protect lands with an economic capability for agriculture and which are now essentially undeveloped except for uses associated with agriculture or forestry. In this district, planned residential developments and developments which do not remove the potential of the land for agricultural production, such as open space, conservation, and certain forms of outdoor recreation, are encouraged. Further road development and the extension of public water supply and sewage disposal systems are not planned

for the district. Therefore, only low density residential and recreational development which utilizes existing facilities; adequately disposes of sewage; and which is compatible with the district's purposes and guidelines should be permitted. However, in order to facilitate effective use of existing structures (particularly historic structures and farm structures) the Town should explore additional allowable uses, such as Community Supported Agriculture (CSA) and renewable energy production that will generate some economic return while not jeopardizing the rural character of the area. Evaluate, as part of the potential merger of the Town and the Village, the Agriculture-Residential zones on the Future Land Use Map regarding more suitable development allowances, for that land occurring south of the Circumferential Highway, east of VT Route 2A, and west of VT Route 15 to the Village jurisdictional boundary.

Low Density Residential (R1): The purpose of the Low Density Residential Area is to facilitate residential development in areas adjacent to but outside of the "sewer core area" as defined in the most recently adopted Town of Essex Sewer Allocation Policy. Densities are kept low and lots are large enough to accommodate on-site disposal systems. Connection to municipal water service may be required.

Medium Density Residential (R2): The purpose of the Medium Density Residential Area is to facilitate residential development in areas inside the "sewer core area" as defined in the most recently adopted Town of Essex Sewer Allocation Policy. Connection to municipal sewer service shall be required where installation of these facilities is feasible or deemed necessary. Densities and lot sizes are based either on the provision of off-site services or the ability to accommodate on-site services.

High Density Residential (R3): The purpose of this area is to encourage a wider range of housing opportunities in an area served by municipal services and facilities and public transportation. Home occupations, accessory apartments, and provisions for multi-family units on small lots are encouraged in this district to enable some expansion of uses while avoiding strip commercial development.

Residential Business (RB): This area includes properties, which are predominantly residential in nature located on the south side of VT Route 15 in Essex Center. The RB district was established to protect the existing residential uses while allowing for limited commercial uses, which are low traffic generators and compatible with neighboring residences.

Business Design Control Overlay (B-DC) and Historic Preservation Design Control Overlay (HPDC): The purpose of these areas is to maintain and enhance the rich cultural and architectural heritage of the Fort Ethan Allen and Essex Center areas and to eliminate or minimize substantial character alterations of the buildings. A report entitled Historic Preservation and Design Control Standards for Essex Center and Fort Ethan Allen (1986) contains standards and guidelines to be used in the review of development proposals in these areas.

Mixed Use (MXD): The purpose of this area is to allow a mix of residential and commercial uses in keeping with the existing character of the area.

Mixed Use-Planned Urban Development (MXD-PUD): This area has a combination of residential, commercial and industrial development on a large tract of land where a comprehensive planning effort has been undertaken.

Mixed Use District-Commercial (MXD-C): The purpose of this area is to provide an area in the Town which permits a broad range of retail and personal service shops, professional and governmental offices, and supportive, compatible commercial uses. Residential uses, which add

interest and vitality to the area and accommodate those who desire high-density housing are encouraged. All uses should be properly located and designed to enhance the existing structures in the area. Development should be reviewed in accordance with the 1991 Town Center Master Plan.

Center (CTR): The purpose of the Center Area is to support the role of the Historic Essex Center as the focus of many social and economic activities in the community. The types of uses that will be encouraged include residential, civic, cultural, neighborhood commercial, home occupations, and other compatible uses that will serve the needs of the community. Such development should occur in a pattern and scale that will maintain the traditional social and physical character of the Historic Essex Center and preserve its historic and scenic resources. Sufficient facilities and services are planned for this area to accommodate moderate to high-density development. Development should be reviewed in accordance with the 1991 Town Center Master Plan.

Retail Business (B1): This area consists of existing commercial areas and adjacent lands which are becoming predominantly commercial in nature. Due to the location of these areas on major thorough-fares, they are well suited for providing the retail, business and personal service needs of this community and other nearby towns. However, strip development along these thoroughfares must be discouraged in favor of consolidated access points in order to minimize traffic hazards and maintain smooth traffic flows. Also, since these areas are the focal point of activity for the Town, the review of commercial development within this district must ensure attractiveness for site design and signage. Furthermore, new commercial development should be compatible with adjacent commercial and residential structures.

Resource Preservation-Industrial (RPD-I): This area is established for land that is comprised of forests, bodies of water, or similar natural settings. The specific objective of the RPD-I district is to protect all or part of such natural attributes for public enjoyment and, when it is deemed economically and aesthetically feasible, to carry out economic development activities in harmony with the natural surroundings. Uses included in this district include office, research and development facilities, laboratories, and limited commercial support services for employees of the Saxon Hill Industrial Park, such as banks, restaurants, recreation/health spas, etc.

Industrial (I1): This area provides for employment opportunities in manufacturing, warehousing, research and development and commercial uses which specifically serve the industries or their employees in areas serviced by good transportation facilities and public utilities. Other uses incompatible with industrial uses, such as residential uses, shall not be permitted for the health, safety and welfare of the community.

11.5 Land Use Goals and Objectives

The following general goals and objectives shall guide any future land use planning, zoning changes and development approvals.

Goal 11.19: Future development should be consistent with Essex's role as a sub-regional center with the scale of development supportable by a market derived from Essex and its surrounding communities.

Objective 11.19.1: Work with other communities in the region to ensure land use compatibility across municipal borders and to protect the vitality and importance of the region's dominant commercial centers.

Objective 11.19.2: Cooperate with the Village of Essex Junction to ensure its vitality as a commercial service center.

Objective 11.19.3: Should merger of the Town and Village occur, the entire community should carefully examine lands along both sides of the current Town/Village boundary to determine appropriate land use designations. Zoning changes may be made to reflect the results of this evaluation.

Objective 11.19.4: Participate in the formulation and implementation of the Chittenden County Regional Plan to ensure the regional functions of the area's municipalities are represented.

Goal 11.20: Facilitate the future development of the Town of Essex by taking into consideration the physical, natural and economic constraints and opportunities.

Objective 11.20.1: Guide and direct future development in accordance with:

- a) the physical capability of the land,
- b) the economic and efficient provision of public services and facilities,
- c) the interrelationship and compatibility of existing settlement patterns,
- d) the proximity to highways and railroads, commercial and employment centers and municipal services,
- e) the appropriate siting of renewable energy sources, such as solar arrays, biomass fields, etc.
- f) the need to address existing deficiencies,
- g) the impact on natural resources and significant features, and
- h) the consistency with the overall goals established in this Plan.

Goal 11.21: Continue to implement a growth management plan that establishes an acceptable rate of growth that can be accommodated by the Town.

Objective 11.21.1: Maintain a population growth rate consistent with the growth rate projected in Chapter 2.

Goal 11.22: Link neighborhoods to shopping centers, schools, work places, and parks and natural areas via a trail and greenbelt system.

Goal 11.23: Plan development so as to maintain and enhance Essex's historic settlement pattern of compact centers separated by rural countryside.

Objective 11.23.1: Intensive residential development shall be encouraged primarily in areas related to community centers, and strip development along highways shall be discouraged.

Objective 11.23.2: Economic growth shall be encouraged in the Town's designated growth centers which are: Essex West/Fort Ethan Allen, Essex Center including Butler's Corners and Lang Farm, and the Saxon Hill Industrial Park.

Objective 11.23.3: Public investments, including the construction or expansion of infrastructure, shall reinforce the general character and planned growth patterns of the area.

Objective 11.23.4: The long-term maintenance of significant open lands shall be encouraged via the implementation of strategies set forth in the 2008 Essex Open Space Plan.

Goal 11.24: Develop a physical and psychological "center" for Essex.

Objective 11.24.1: Update and consider the designs, standards and recommendations from the 1991 Town Center Master Plan in the review of future development plans for the Town Center area.

Objective 11.24.2: Review and consider the recommendations of the 2004 Town Center Study Committee, including increased residential densities, increased proportions of residential in the residential to commercial mix and underground or tiered parking.

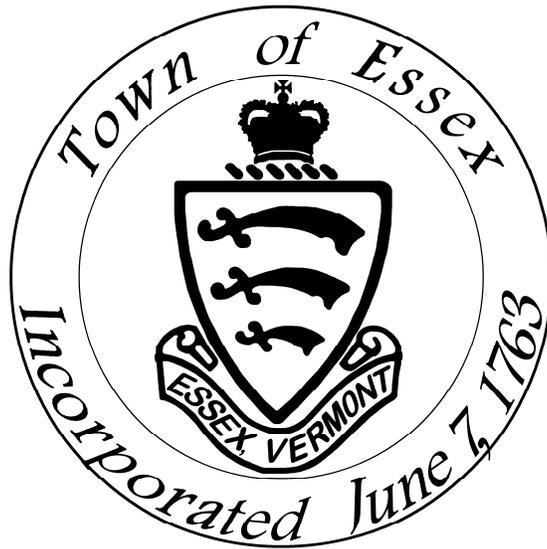
Goal 11.25: Preserve existing structures in the Agriculture/Residential Area (particularly historic structures and farmstead structures) by allowing additional uses that provide more economic return while not jeopardizing the rural character of the area that the Town seeks to maintain.

Objective 11.25.1: Explore the potential of additional uses that may be allowed in the Agricultural/Residential Area to provide some economic return for the use of existing structures (particularly historic structures and farmstead structures) while not adversely impacting other important characteristics of the area.

Strategy 11.25.1.1: Undertake a study of potential uses that meet the above criteria, and ways that they can be incorporated into the regulations for the Agriculture/Residential Area while continuing to protect the rural character and natural features of the area.

Strategy 11.25.1.2: Amend the Zoning Regulations for the Agriculture/Residential Area to allow those uses identified as providing some economic return to the use of existing structures while not adversely impacting other important characteristics of the area.

TOWN OF ESSEX
OUTSIDE THE VILLAGE OF ESSEX JUNCTION
OFFICIAL ZONING REGULATIONS



Effective February 7, 1972

As Amended On:

February 12, 1973

April 15, 1974

November 14, 1977

December 27, 1977

April 21, 1980

January 5, 1981

February 9, 1987

May 18, 1987

October 16, 1989

February 15, 1993

May 22, 1995

October 27, 1997

December 29, 1998

April 9, 2001

August 25, 2003

December 20, 2004

April 18, 2005

March 24, 2008

December 24, 2008

March 15, 2010

May 23, 2011

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- (1) Signs in districts other than the B1, RB, CTR, B-DC, I1, MXD-C, MXD-PUD, MXD and RPD-I Districts, existing prior to the enactment of these Regulations may be allowed to remain, subject to the following:
 - (a) The sign meets the requirements of Subsections 5.9(C) (General Provisions) and 5.9(D) (Illumination) of these Regulations.
 - (b) The sign is structurally sound and presents no hazard to the public.
 - (2) Permanent signs existing and/or approved prior to the enactment of these Regulations which do not satisfy the provisions of this Section may be repaired and maintained but may not be expanded or replaced.
- (I) **Signs for Nonconforming Uses.** All provisions of this section shall apply to signs for nonconforming uses, regardless of the district in which they are located.
- (J) **Sign Permits and Administration.**
- (1) Any person desiring to erect, install, replace, construct, alter or move a sign shall, prior to doing so, obtain a sign permit from the Zoning Administrator.
 - (a) Application for a sign permit shall be on forms provided by the Zoning Administrator and shall contain detailed plans of the sign, including exact size, wording, illumination, colors and location.
 - (b) Applications for facade sign permits shall also include information regarding the area of the facade on which the sign will be attached.
 - (2) In the event a particular situation is not set forth herein, which in the opinion of the Board of Adjustment is consistent with the philosophy set forth in this Section, the Board of Adjustment, on appeal, may approve the proposed sign, provided that all of the other provisions of this Section are satisfied.

3.11 Surface Waters and Wetlands Protection: These standards are established to provide for and protect buffer areas bordering streams, lakes, ponds and wetlands in the Town of Essex. Buffer requirements under this section are intended to retain, establish, maintain and protect heavily vegetated areas of native species that border surface waters and wetlands, in order to reduce impacts from flooding and stormwater runoff, to prevent soil erosion, to protect wildlife, fish habitat and ecological diversity, and to maintain water quality.

- (A) **Applicability.** The requirements of this section shall apply to all development on existing or proposed lots within designated buffer areas after the effective date of these Regulations (April 14, 2008).
- (1) Buffer requirements under this section apply to all streams, to reservoirs and naturally occurring lakes and ponds with a surface area greater than 21,780 square feet (1/2 acre), and to all naturally occurring Class I and II wetlands, as these features are defined in Section 8.1 (Definitions).
 - (2) For permitted uses the requirements of this section shall be administered by the Zoning Administrator. For all other development, the requirements of this

section shall be administered by the Planning Commission or Board of Adjustment within their respective areas of jurisdiction under these Regulations, in consultation with the Conservation Committee and Public Works Department.

- (3) Pre-existing nonconforming structures and uses within designated buffer areas may be enlarged or expanded only in accordance with the requirements of Section 3.8 (Nonconformities) and Subsection (F) below.

(B) **Application Requirements.** In addition to the application requirements for zoning permits (Section 7.2) or site plan or conditional use review (Section 5.2), applications for development subject to the provisions of this section shall meet the following requirements:

- (1) The site plan accompanying the application shall show designated buffer areas, as identified and delineated in accordance with Subsection (C), and staked out on site. Information depicted on the site plan shall include:
 - (a) The location of existing and proposed structures, uses, utilities, lawn and parking areas in relation to delineated buffer areas, and
 - (b) Slopes, vegetation and soil types, and all existing and proposed improvements within designated buffer areas.
- (2) Applications under this section shall be forwarded by staff, within 30 days of receipt, to the following. No zoning permit or approval shall be issued until a response has been received, or 30 days from the date of referral, whichever is sooner.
 - (a) The Essex Conservation Committee for review under Section 7.7 of these Regulations (Advisory Committees).
 - (b) The Essex Public Works Department for review under the Town's stormwater management ordinance. A stormwater permit application also may be required.
 - (c) The State Wetlands Coordinator, or Wetlands Biologist serving the Town of Essex, for applications involving wetlands.
 - (d) The State National Floodplain Insurance Coordinator at the at the Vermont Department of Environmental Conservation, River Management Section, for development also located within designated areas of special flood hazard (C2 District), in accordance with Section 5.8(E).
 - (e) Adjacent communities and the Stream Alteration Engineer at the Vermont Department of Environmental Conservation, River Management Section, for any proposed alteration or relocation of a water course within a designated buffer area, in accordance with Section 5.8(E).
- (3) The Planning Commission or Board of Adjustment may require additional information from the applicant, including channel and shoreline profiles (cross-sections), hydrologic or slope stability analyses, or buffer or stormwater management plans as needed to determine project conformance with the requirements of this section.

(C) Buffer Designations.

- (1) Identification. The location of surface waters, wetlands, and associated buffers may be identified initially from one or more of the following sources for subsequent delineation in the field:
 - (a) The Significant Features Reference Map as included in the Essex Town Plan.
 - (b) The Water Resources Map as included in the Essex Town Plan.
 - (c) Current Vermont Significant Wetland Inventory (VSWI) Maps.
 - (d) Current National Wetlands Inventory (NWI) Maps.
 - (e) Vermont Base Maps (orthophotos).
 - (f) Site investigation.
- (2) Delineation. Buffer areas shall be delineated on the ground in accordance with the following requirements.
 - (a) Riparian Buffers. Riparian buffers along streams shall be at least fifty feet (50') in width, as measured horizontally from either the top of bank or top of slope, depending on the specific characteristics of a stream section. In the event that both top of bank and top of slope could be used to establish the buffer, the larger buffer distance shall control. Riparian buffer measurements shall be based on the following (see also Figure 3.1a):
 - (i) Where the bank slope adjacent to a channel represents the stage at which average high water accesses a relatively flat and wide floodplain or wetlands, the riparian buffer measurement shall be taken from the top of bank or upland edge of the contiguous wetland, whichever is greater (Fig. 3.1a).
 - (ii) Where the channel is contained in a narrow, V-shaped valley that has steep side slopes and little or no floodplain, the riparian buffer measurement shall be taken from top of slope (Fig. 3.1b).
 - (iii) Where the channel has an accessible floodplain on one side, and a steep slope or high terrace on the other, the top of slope shall control on the steep side of the channel and the top of bank shall control on the floodplain side of the channel (Fig. 3.1c).
 - (iv) Where the channel has recently abandoned a floodplain as a result of abandoning the streambed and is establishing a floodplain at a lower elevation, the riparian buffer shall be measure from the top slope of the recently abandoned floodplain (Fig. 3.1d).
 - (b) Shoreland Buffers. Shoreland buffers bordering reservoirs and naturally occurring lakes and ponds having a water surface area of greater than 21,780 square feet (1/2 acre) shall be at least 150 feet in width, as measured horizontally from the mean water level.
 - (c) Wetland Buffers. Buffers bordering wetland areas shall be at least 100 feet in width for Class I wetlands, and 50 feet in width for Class II wetlands, as measured horizontally from delineated wetland boundaries. Boundaries shall be delineated on site by a qualified wetlands or aquatic biologist, based

on the presence of hydric soils, hydrophytic vegetation and site hydrology, in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual*, or other currently accepted state standard for wetlands delineation.

- (3) Exceptions.
 - (a) Field delineation of buffers may be waived by the Zoning Administrator, Planning Commission or Board of Adjustment only if it is clearly established from maps and site investigation that the proposed development, and all areas of site disturbance, will occur well outside of any required buffer protection area.
 - (b) The Planning Commission or Board of Adjustment, as a condition of project approval, may require buffer distances greater than the minimum distances specified above, up to 100 feet and/or additional mitigation measures under Subsection (F) for:
 - (i) Streams that have a history of or potential for significant short-term lateral or vertical channel adjustment.
 - (ii) Streams within designated floodplains, where the fifty-foot (50') minimum buffer is entirely within the 100-year floodplain (below the base flood elevation).
 - (iii) Streambank and shoreland areas characterized by steep slopes (in excess of fifteen percent (15%)), highly erodable soils, or that lack sufficient vegetation to effectively limit stormwater runoff and erosion or the filtration of pollutants.
 - (iv) Buffer areas that incorporate significant wildlife corridors, or support identified riparian-dependent species or significant natural communities, which extend beyond the required minimum or are in close proximity to the project site.
- (4) Marking. Designated buffer areas shall be clearly marked on the ground prior to the start of site work and construction, as necessary to avoid any encroachment or disturbance within these areas from site preparation, construction and landscaping activities. Stakes shall not be removed until all construction and landscaping activities are completed.

(D) **General Standards.** The following standards shall apply to all types of buffers under this Section:

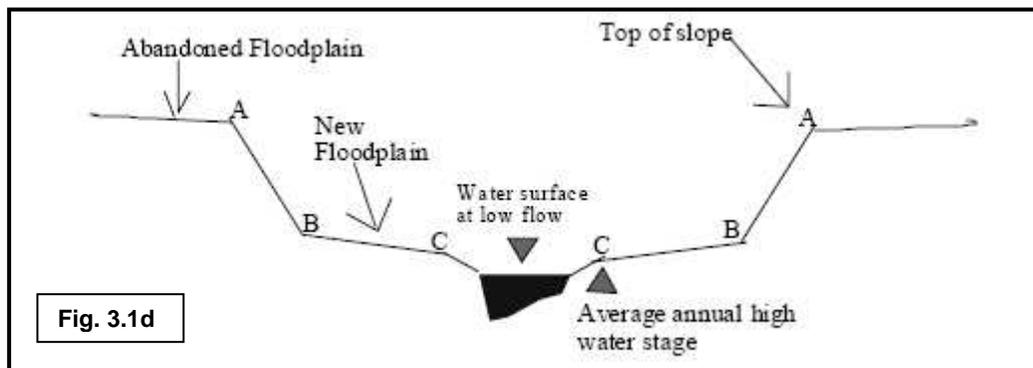
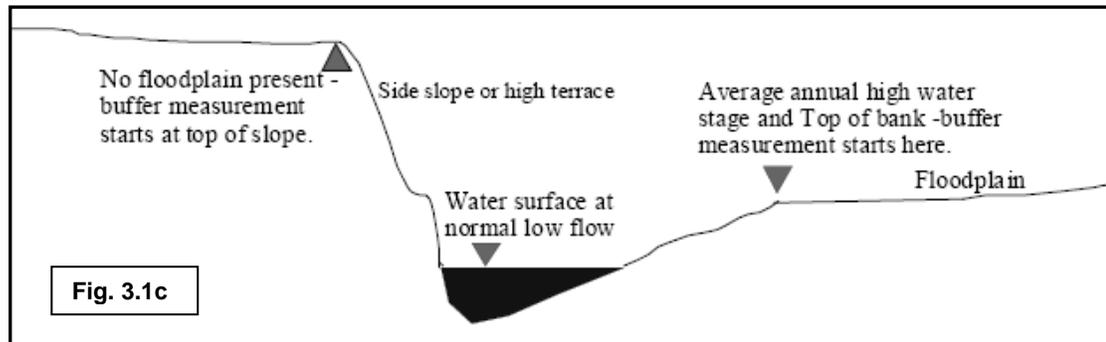
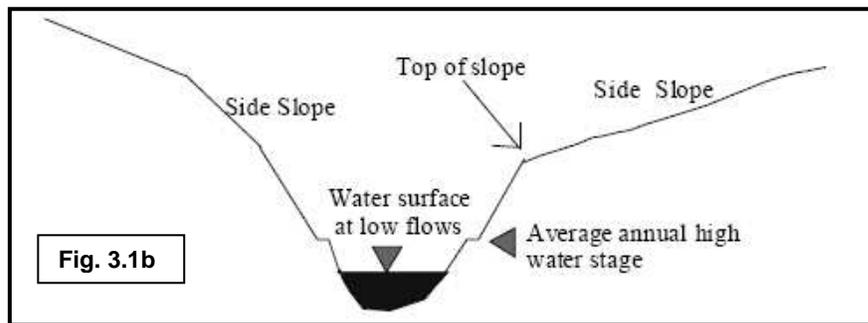
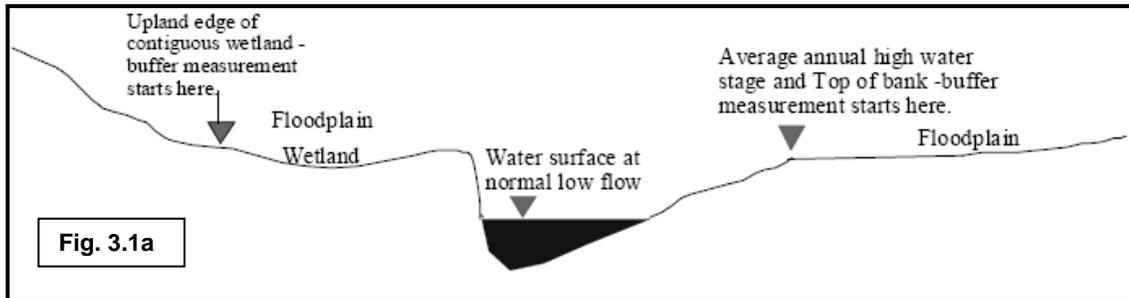
- (1) Except for allowed encroachments as provided for under Subsection (E) below, all lands within a buffer shall be left in an undisturbed, vegetated condition.
- (2) Except as provided under Subsection (E) below, no new structures shall be allowed within designated buffers, unless it is determined by the Board of Adjustment under Section 7.5 (Variances) that the applicant has no developable property outside the buffer area and strict adherence to the requirements of this section would preclude all reasonable uses of the property under these Regulations.

- (3) Any areas within a required buffer that are not vegetated, or that are disturbed by construction allowed within the buffer area, shall be seeded with a naturalized mix of grasses rather than standard lawn grass, and shall not be mowed.
- (4) Removal of dead trees or trees of immediate threat to human safety, and limited pruning of existing trees for stand health and visual access, is allowed without municipal approval, unless otherwise required under a buffer management plan approved by the Planning Commission or Board of Adjustment.
- (5) The creation of new lawn and parking areas within designated buffers is not allowed. Property owners already encroaching within buffer protection areas are encouraged to return mowed or paved areas to their naturally vegetated state, and to restore and enhance these areas with landscaping and supplemental plantings of native vegetation that restore and enhance buffer filtration and bank stabilization functions.

(E) **Stream Restoration and Bank Stabilization.** Within designated buffer areas:

- (1) No municipal permits or approvals are required for stream restoration projects that have been approved by the Vermont Agency of Natural Resources and do not involve dam removal.
- (2) No municipal permits or approvals are required for bank stabilization and buffer re-establishment activities that are limited to supplemental plantings, the removal of invasive species, or the use of “soft,” nonstructural bank stabilization techniques such as the use of brush matting, plant staking and contour wattling.
- (3) Approval from the Town Engineer is required for use of structural or “hard” bank stabilization techniques that involve armoring, such as the use of rip rap revetments, cribbing or retaining walls.

Figure 3.1 Riparian Buffer Measurements



- (F) **Encroachments.** Encroachments within designated buffer areas, except for stream restoration and bank stabilization techniques under Subsection (E), are allowed only in accordance with the following:
- (1) No municipal permits or approvals are required for the following activities within designated buffer areas.
 - (a) Accepted agricultural practices (AAPs) as defined by the Secretary of Agriculture Food and Markets in accordance with the Act [§ 4413]; however, farm structures shall meet minimum buffer (setback) requirements under this section unless specifically waived by the Secretary. Required buffer (setback) distances shall be shown on sketch plan included with the written notification submitted to the town under the AAPs (see Table 1.1 Exemptions).
 - (b) Accepted management practices (AMPs) for silviculture (forestry) as defined by the Commissioner of Forests, Parks and Recreation (see Table 1.1 Exemptions).
 - (c) Encroachments necessary to rectify a natural catastrophe for the protection of public health, safety and welfare.
 - (d) Buffer management activities as authorized in the conditions of project approval, or in a buffer or stormwater management plan approved by the town.
 - (e) Encroachments within a required wetland buffer for which Conditional Use Determinations (CUDs) have been issued by the Vermont Department of Environmental Conservation.
 - (2) The following encroachments may be allowed within designated buffer areas, subject to conditional use review and approval by the Board of Adjustment under Section 5.7, and the requirements of this section:
 - (a) The removal of vegetation, the placement of fill, or the excavation of top soil or earth materials only to the extent directly necessitated by the construction or operation of an approved development or use within the buffer area.
 - (b) The reconstruction, enlargement or substantial improvement of a pre-existing, nonconforming structure, or portion thereof, in legal existence as of the effective date of this section, which is located within designated buffer areas.
 - (i) In addition applicable provisions of Section 3.8 (Nonconformities), the Board shall not approve any construction which reduces the existing setback distance from the surface water or wetland, or which increases the extent of existing encroachment (footprint area) of the structure within the buffer area by more than fifty percent (50%) unless a variance is obtained under Section 7.5.
 - (ii) A variance shall also be required for the reconstruction of a structure within the buffer area that has been damaged or destroyed over seventy five percent (75%) of its market value by flooding or fluvial erosion.

- (c) A new accessory structure that is appurtenant to a pre-existing structure, for which it is determined by the Board that there is no other feasible location outside of the designated buffer area. Such structures shall encroach no farther into the required buffer than the existing structure, nor increase the extent of the existing encroachment (footprint area) within the required buffer by more than fifty percent (50%).
 - (d) Unpaved footpaths for the purpose of public recreation to be located at least ten feet (10'), as measured horizontally, from the top of bank, top of slope, or mean water level as applicable under Subsection 3.11 (C).
 - (e) Paved footpaths for the purpose of public recreation to be located at least fifty feet (50'), as measured horizontally, from the top of bank, top of slope, or mean water level as applicable under Subsection 3.11(C).
 - (f) Outdoor recreation and education facilities provided that any structure, building, parking area or driveway associated with such use is located outside the designated buffer.
 - (g) Docks, and boat launches or ramps no wider than twenty feet (20') that provide public access to adjoining surface waters and are designed and constructed to minimize stormwater runoff and bank erosion.
 - (h) Stormwater treatment facilities that have not been previously authorized by the town as a condition of approval, or under a buffer or stormwater management plan approved by the town. The Board may require submission of evidence that the facility has been approved by the state, or by the town under the Town's stormwater management ordinance in effect at the time of application, prior to approving any associated encroachment within the buffer area.
 - (i) Roads or driveways for purposes of crossing riparian buffer areas to gain access to land on the opposite side of a stream, or for purposes of providing safe access to an approved use. Road and driveway crossings shall occur at right angles to the stream channel unless stream channel characteristics warrant other angles of alignment.
 - (j) Utility line crossings, including telephone, cable, sewer and water line crossings, only to the extent necessary, and where no alternative alignment exists to provide or extend services.
 - (k) Dam removals, in accordance with a plan approved by the Vermont Agency of Natural Resources.
- (3) In order to ensure that the purposes of this section are addressed, the Board of Adjustment may approve encroachments into designated buffer areas only upon finding that:
- (a) No feasible alternatives exist to site the proposed structure, facility or activity outside of the required buffer area.
 - (b) The amount of encroachment represents the minimum necessary to allow for reasonable use of the property based on the type of development, facility or activity proposed.
 - (c) The encroachment(s) shall not have an undue adverse effect on soils, vegetation, wildlife habitat or significant natural communities within the

required buffer area, or the quantity and quality of protected surface and ground waters.

- (d) The encroachment(s) shall not adversely affect the ability of the property to adequately carry or store flood waters.
- (e) The encroachment(s) shall not adversely affect the ability of an existing or proposed stormwater treatment system to control runoff and reduce sedimentation, in compliance with state and municipal standards.
- (f) The encroachment(s) shall not adversely affect the buffer area's ecological diversity, wildlife habitat, or recreational or aesthetic values.
- (g) The impact of the encroachment(s) on identified buffer values and functions is minimized and/or offset by one or more corresponding mitigation measures, as may be required under Subsection (G) below.

(G) **Mitigation Measures.** The Planning Commission or Board of Adjustment may require, for applications within their respective jurisdictions, one or more of the following mitigation measures intended to ensure that the purposes of this section are met, and to offset or mitigate the impacts of development on the Town's surface waters and wetlands, including but not limited to any one or more of the following:

- (1) Increased buffer widths in accordance with Subsection (C)(3).
- (2) Requirements that existing yard or parking areas within designated buffers be returned to their naturally vegetated state.
- (3) Planting of additional, native vegetation within the designated buffer, including but not limited to trees, shrubs and groundcover, to increase filtration, reduce runoff and erosion, stabilize slopes and streambanks, and restore previously disturbed buffer areas.
- (4) On-site diversion and/or treatment of runoff away from a designated buffer zone.
- (5) Flood, stormwater management, slope or streambank stabilization measures recommended by the Conservation Committee, Public Works Department or Vermont Agency of Natural Resources.
- (6) The submission, for Commission or Board review and approval, of a buffer management plan prepared by a qualified professional.
- (7) Other methods of mitigation as may be acceptable to the town.

3.12 Utilization of Renewable Energy: No structure shall be constructed that eliminates or prevents the ability to utilize renewable energy on adjoining or adjacent property. If a variance is granted in accordance with Section 7.5 for a use or structure which infringes on the ability to utilize renewable energy, the variance must provide for compensation to the adjoining or adjacent property owner such that an alternative method of energy utilization at a cost reasonably near that of the deprived use is possible.

- (4) By a majority vote of its membership, the Planning Commission or Board of Adjustment may approve the consent agenda as a whole without discussion. If a member of the Board or Commission, the applicant or other interested party, requests a more complete hearing on an item in the consent agenda, that item may be withdrawn from the consent agenda by a majority vote of the Commission or Board. A hearing shall be held on that item, either later in the meeting or to be continued at a subsequent meeting, if necessary.
- (5) Following action by the Planning Commission or Board of Adjustment, the decision shall be issued in accordance with Section 7.7(E) of these regulations.

(B) **Substantial Amendments.** Substantial (non-minor) amendments to approved site plans shall not be made without submitting a revised application for review and approval by the Planning Commission or Board of Adjustment under Section 5.2.

5.6 Site Plan Review: The purpose of site plan review is to ensure that the layout and design of development on pre-existing or approved lots conform to the Town Plan of record, these Regulations and applicable conditions of previous subdivision and conditional use approvals. Standards specifically relate to the internal layout of a site, its physical design, and the functional integration of the site with adjoining properties, uses and infrastructure. In reviewing site plans, the Planning Commission shall consider and may impose conditions and safeguards only with respect to criteria specified below.

The Planning Commission shall have the authority to commission an independent technical review of an application by a qualified consultant in circumstances where town staff has indicated that an element is beyond their scope of expertise. The cost of this review shall be paid by the applicant. The Commission may table the application pending the results of this review.

- (A) **General Requirements.** In the review of site plan applications, the Planning Commission shall consider and may impose conditions with regard to:
- (1) Conformance with the duly adopted Essex Town Plan.
 - (2) All dimensional limitations and other applicable provisions of these Regulations.
 - (3) Aesthetics including consideration of visual impacts only insofar as it may directly interrelate with the following other aspects of site plan review.
 - (4) Any outstanding violations on the property.
- (B) **Natural Features.** Site layout and design, to the extent feasible, shall incorporate and protect significant natural features as identified on the Significant Features and Water Resources Maps contained in the Town Plan of record or through site investigation. At minimum, site layout shall be designed to:
- (1) Topography – Minimize changes to existing site topography and vegetation. The site shall be planned to retain, insofar as possible, the natural contours and to conserve the natural cover and soil. No topsoil, sand or gravel shall be removed from the site for any other purpose than to meet construction needs of the site

- (4) All fixtures shall be full cut-off fixtures, and all light sources and reflector/refractor surfaces shall be concealed from view, except if waived by the Planning Commission.
 - (5) In reviewing a site plan and lighting plan, the Planning Commission shall take into account the existing and proposed lighting levels of an adjacent public right-of-way. In the event that the Planning Commission determines that a degree of light trespass for site lighting into the public right-of-way is advisable, the Planning Commission may, at its discretion, waive the provisions of Section (2), (3) or (4) above upon a specific finding that such a waiver is consistent with the provision of safe and adequate lighting in the public right-of-way.
 - (6) Exterior light sources should be selected to minimize adverse color rendering of surrounding landscaping.
 - (7) Parking lot lights mounted on poles shall not ordinarily exceed twenty-two feet (22') in height, or fifteen feet (15') in height if located adjacent to residential districts. Notwithstanding this limitation, in conjunction with the review and approval of a lighting plan pursuant to this section, the Planning Commission shall have the authority to allow freestanding light fixtures with a maximum height of up to thirty feet (30') above finished grade. Such height shall include the total height of bases, poles and fixtures measured from finished grade to the highest point of the structure. In granting such an approval, the Planning Commission shall make a finding that the height of the proposed fixtures contributes to the overall quality of the lighting plan by promoting even lighting levels at grade, reducing the total number of required light fixtures and poles on the site, or minimizing light trespass on adjacent properties.
 - (a) The Planning Commission may allow an increase in mounting height up to a maximum of thirty feet (30') if it finds that the additional height is necessary for energy conservation, or to ensure that parking lot lighting is adequate for safe use of a particular site, and adjoining properties are not adversely affected.
 - (8) To the extent practicable, exterior lighting shall be consistent with any site lighting guidelines that the Planning Commission may adopt.
- (H) **Utilities and Services.** The Planning Commission shall consider, and may impose conditions, with regard to the following utilities, facilities and services:
- (1) Water and Sewage Disposal – The adequacy of provisions for potable water supply and waste disposal, in accordance with Section 3.13. If municipal services will be relied upon, then the availability of sufficient capacity will need to be demonstrated. Improvements to these systems related to the impact of the development may be required.
 - (2) Stormwater Management – The adequacy of the proposed storm water drainage system and its regular maintenance. All systems shall be designed to meet the

requirements of the Town's Stormwater Management Ordinance. Any proposed drainage system shall direct storm water to the nearest existing natural watercourse. Easements to the Town along any natural or manmade elements of the drainage system shall be provided if requested by the Town Engineer. All calculations for the drainage system and the amount of storm water runoff to be generated shall be based on the twenty-five (25) year storm event or as required by the Town Engineer. Proposed systems shall also include detailed information explaining how the system will be maintained regularly over the long-term and who shall be responsible for said maintenance. Such information shall include proposed deed language for inclusion in the Town Land Records. In the event the town maintains a duly adopted storm water management plan, information shall be provided indicating how the proposed development conforms to that plan.

- (3) Utilities – All utilities shall be underground except where the Planning Commission, upon recommendation of the Town Engineer, determines that ledge, underground water or other conditions make underground installation infeasible. Underground siting of distribution transformers is preferred. If above grade, distribution transformers shall be provided with adequate safety covers, and shall be landscaped and sited in unobtrusive locations.
- (I) **Fire Protection.** Adequate provision for fire protection shall be made in the site layout insofar as it may directly interrelate with the above aspects of site plan review.

5.7 Conditional Use Review: Conditional use review is intended to ensure compliance with standards addressing the potential impacts of development. Typically, land uses are subject to conditional use review because their scale, intensity and potential for off-site impacts warrant more careful scrutiny by the Board of Adjustment. Standards and conditions relate to the identification, avoidance and mitigation of potential impacts. In reviewing applications for conditional use approval, the Board of Adjustment shall consider and may impose conditions and safeguards only with respect to criteria specified below.

- (A) **General Standards.** The Board of Adjustment, after public notice and public hearing, may grant conditional use approval only upon finding that the proposed development shall not result in an undue adverse effect on any of the following:
 - (1) Capacity of existing or planned community facilities – The Board shall consider the demand for community services and facilities resulting from the proposed development in relation to the available capacity of affected services and facilities, the Town's adopted capital improvement plan, official map and any impact fee ordinance in effect. Conditions, including project phasing or improvements necessary to accommodate the proposed development, may be imposed as necessary to ensure that the demand for facilities or services does not exceed existing or planned capacity.
 - (2) Character of the area affected – The Board shall consider the location, scale, type, density and intensity of the proposed development in relation to the character of the area likely to be affected, as defined by the purpose(s) of the

TOWN OF ESSEX
OUTSIDE THE VILLAGE OF ESSEX JUNCTION
OFFICIAL SUBDIVISION REGULATIONS



November 26, 1979
October 9, 1989
July 4, 1995
September 9, 1996
December 28, 1998
April 30, 2001
December 8, 2003
April 14, 2008
December 22, 2008
May 23, 2011

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ARTICLE IV: SUBDIVISION STANDARDS

4.0 General Standards: The Planning Commission shall evaluate any proposed subdivision according to the following general standards. In light of findings made regarding these standards, the Commission may require modification or phasing of the proposed subdivision.

4.1 Standards Applicable To All Subdivisions.

- (A) The applicant shall be guided by the minimum planning, design and construction standards contained in these Regulations and the Town's Public Works specifications, and shall provide all of the improvements specified in this Article. As specifications for alternative energy technologies become available and incorporated into the Town's Public Works Specifications, they shall also become incorporated into review under these Regulations.
- (B) Where the Planning Commission finds that, because of exceptional and unique conditions of topography, location, shape, size, drainage or other physical features of the site, or because of the special nature and character of surrounding areas, the minimum standards specified herein would not reasonably protect or provide for public health, safety or welfare, a higher standard may be required.
- (C) Land to be subdivided for building purposes shall be of such character that it can be used safely without danger to health or peril from flood or other menace.
- (D) To ensure adequate access, any subdivision or combination of proposed and previously approved or built subdivisions containing fifty (50) or more dwelling units shall include a street system that has two separate permanent connections to the existing street system. Such connections shall be open to public motorized vehicular traffic and shall be proposed as Town streets for acceptance by the Town. Notwithstanding the above regulation, with Planning Commission and Selectboard approval, one of the street connections may be limited to emergency and pedestrian access only. Prior to granting such limitation, the Town Engineer, Community Development Director, Fire Chief, and Police Chief shall be consulted for their recommendation(s).
- (E) The subdivision plan must contain adequate provisions for pedestrian traffic and connections with pedestrian ways on adjoining properties by sidewalks, paths, and/or trails.
- (F) Any major subdivision fronting on a major street or collector street, as defined in Article VI of these Regulations, shall be laid out so that all lots created have access from new minor roads rather than directly from the major or collector street. (See also Street Planning Standards in Section 4.3).
- (G) All lots created by any proposed subdivision shall conform to the Town's Zoning Regulations.

- (H) The proposed subdivision shall demonstrate a desirable relationship to the land form, its topography and geology, to natural drainage and surface water runoff, to the ground water table, and to other natural features.
- (I) The proposed subdivision shall provide adequate access to all of the lots in the subdivision by streets that are designed to current safety standards under existing and future traffic conditions, and designed to meet appropriate standards based on the functional characteristics of the type of street. The four functional types of streets are: major (arterial) road, collector road, minor (local through) road, and minor dead-end road.
- (J) The proposed subdivision shall make adequate provisions for water, sewage, drainage, stormwater management, and other requirements where necessary, in accordance with the health and safety of the community.
- (K) The proposed subdivision shall include provisions for safety in the case of fire, flood, panic and other emergencies.
- (L) The proposed subdivision shall include provision for such facilities as are desirable adjuncts to the contemplated use, such as parks, recreation areas, pedestrian ways and off-street parking.
- (M) The proposed subdivision shall include preservation of natural assets such as streams, ponds, trees, agricultural land, attractive scenic areas, and historic sites.
- (N) The proposed subdivision shall promote variety and flexibility in residential development including clustering of lots under provisions of the Act [§4417], and the Town Zoning Regulations.
- (O) The proposed subdivision shall include appropriate utilization of municipal services and avoidance of adverse effect on the Town's ability to maintain facilities and to provide public works and educational services.
- (P) The proposed subdivision is in conformance with the Town Plan.
- (Q) Where an existing home(s) exists within a proposed subdivision the Town shall be informed of any apartment(s) within said home(s).
- (R) The proposed subdivision shall provide adequate landscaping and screening to ensure an aesthetically pleasing development while screening undue adverse impacts of the proposed subdivision on adjacent properties.
- (S) Over-Sized Improvements and Provisions for Future Expansion:
 - (1) In conformance with the Town Plan or as otherwise determined by the Town, the applicant may be required to install storm drainage, stormwater management, water supply, or sewage disposal facilities of a size adequate to accommodate

- anticipated needs of future developments.
- (2) The Town may require the applicant to provide easements, in combination with anticipated street connections or at other necessary locations, to allow future extension of facilities and/or street or walkway access to adjacent undeveloped properties.
 - (3) The Town, with Selectboard approval, may reimburse the applicant for the difference in cost between the facilities actually needed in the subdivision and the cost of facilities necessary to provide for future development.
 - (4) When further development occurs, the Town may charge the appropriate portion of the additional cost to that subsequent subdivider.
- (T) Development within an approved subdivision shall be subject to any impact fees that the Town may enact in accordance with 24 V.S.A., Chapter 131. However, if the subdivision developer is required to provide land or construct facilities explicitly included in the calculation of the impact fees, the developer may apply for a credit against the impact fees in an amount equal to the cost of such construction, but not exceeding the amount of the impact fee.

4.2 Standards Applicable to Minor Subdivisions: In general, Minor Subdivisions shall be subject to the standards listed above and required improvements as specified in the following sections of this Article. The Planning Commission may, however, require that a particular Minor Subdivision meet any additional standards and required improvements specified under this Article, if it deems that necessary to achieve the purposes of these Regulations.

- (A) Depending on the size and layout of the minor subdivision, the requirements of the following sections may also apply:
- (1) Section 4.3 Preservation of Natural and Significant Features
 - (2) Section 4.4 Lots – Planning and Design Standards.
 - (3) Section 4.5 Streets – Construction Standards
 - (4) Section 4.6 Sidewalks – Planning and Construction Standards
 - (5) Section 4.7 Open Space
 - (6) Section 4.8 Utility Easements and Public Utility Improvements
 - (7) Section 4.9 Water Supply and Waste Water Systems
 - (8) Section 4.10 Stormwater Management and Erosion Control
 - (9) Section 4.11 Monuments and Lot Markers

4.3 Preservation of Natural Features:

- (A) Natural Features: Outstanding natural features of the site, including groves of trees, watercourses and falls, historic sites, exceptional views, and similar irreplaceable assets, shall be preserved. The Planning Commission may require building envelopes to be specified for some or all buildings where it is necessary to carefully define building locations and heights in order to protect the natural features listed in this section or identified on the Significant Features Reference Map.

- (1) The subdivision shall be planned so as to retain, insofar as possible, the natural contours and to conserve the natural cover and soil. No topsoil, sand or gravel shall be removed from the subdivision for any other purpose than to meet construction needs of that particular subdivision unless special approval is obtained from the Zoning Board of Adjustment.
- (2) Where subdivision improvements will occur on slopes, in un-vegetated areas, or in other areas with fragile soil conditions, plans shall be submitted to ensure adequate erosion and stormwater control in conformance with the Town's adopted Stormwater Ordinance. Where necessary, the Planning Commission shall require temporary measures to protect areas exposed during the development, consistent with the requirements of the Town's Stormwater Ordinance.
- (3) Topsoil removed in the process of grading the subdivision site shall be replaced to an average depth of four (4) inches (10 cm) with a minimum depth of two (2) inches (5 cm) and the site seeded in accordance with Soil Conservation Service recommendations and the Town's Public Works Specifications.
- (4) No building, building envelope, road, sidewalk or utility shall be located within wetlands (as defined in Article VI of these Regulations) and associated buffers, except as specified in Section 3.11(F) of the Town's Zoning Regulations.
 - (a) Establishment of Wetland Buffer Boundaries: The location of wetlands and associated buffers may be identified initially from one or more of the following sources:
 - (i) The Significant Features Reference Map as included in the Essex Town Plan.
 - (ii) The Water resources Map as included in the Essex Town Plan.
 - (iii) Current Vermont Significant Wetland Inventory (VSWI) Maps.
 - (iv) Current National Wetland Inventory (NWI) Maps.
 - (v) Vermont Base Maps (orthophotos).

For the purposes of Sketch Plan review, these references shall be used as an indication of the boundary of possible wetlands and associated buffers, in the absence of field derived information.

The boundary of the wetland and associated buffers shall be field delineated by the applicant either at their discretion or as may be directed by the Planning Commission as a condition of Sketch Plan approval. Boundaries of wetlands shall be delineated on the basis of the presence of hydric soils, vegetation and the hydrology of the site according to the current requirements of the ANR and verified by a field inspection by a representative of the ANR, as appropriate.

Field delineations of wetlands and associated buffers must be performed by a wetlands biologist, soils scientist or other land use professional (civil

engineer, landscape architect, planner) with recognized expertise in field delineation of wetland areas. The Planning Commission reserves the right to require the applicant to provide documentation regarding the expertise of the person who has performed the field delineation. The Planning Commission may also require that the field delineation be reviewed by staff from the ANR or Army Corps of Engineers, as they may be available, or an expert of the Planning Commission's own choosing.

Such a field delineation, upon approval by the Commission, shall supersede the boundaries shown on the Significant Features Reference Map.

- (b) **Review Process and Waiver Based on a Conditional Use Determination:** Because subdivision applications can differ dramatically with respect to the amount of impact they may propose on wetlands or wetland buffer areas, the Planning Commission may choose to require that all applicable wetland permits be obtained prior to Preliminary Plan approval if it finds that either:
- (i) The wetland impact is extensive in area; or
 - (ii) There is a likelihood that the wetland permitting agencies will require significant changes in the proposed subdivision layout or extent of development prior to issuing permits.

At the Final Plan approval the Planning Commission may formally waive the limitation on development within the wetland and its buffer established by this section if the applicant has obtained a Conditional Use Determination from the ANR which approves development within the wetland and/or associated buffer.

- (5) Lot sizes should be encouraged to be the minimum possible to site the primary use, accessory buildings, on-lot water, on-lot sewer and access driveways in order to maximize the area of protected open space.
 - (6) Where the subdivision occurs in a forested or partially forested area, the subdivider shall submit recommendations from a professional forester regarding placement of subdivision improvements and removal of trees.
- (B) **New Trees:** New street trees shall be provided in areas where no trees presently exist or where existing trees would suffer life-shortening construction damage. One street tree shall be provided for each fifty feet (50') of frontage along a public or private road, provided that at least one street tree shall be provided on each lot.
- (1) Street trees shall be planted in the public right-of-way, either between the sidewalk and the curb or no more than five feet (5') inside of the front property line, at the discretion of the Planning Commission.
 - (2) Street trees shall be of a size and species identified as appropriate on any Site Plan or Landscape Guidelines adopted by the Planning Commission, or as approved by the Commission. Street trees shall be planted on the property side

Core Area”, and wherever a public sewage disposal system is reasonably accessible within the designated sewer core area, and where connection to the public sewage disposal system is consistent with the Town Plan and any other applicable Town policies, the applicant shall install a complete sanitary sewer system with adequate connections to the public system designed to meet the standards set forth in this Sub-Section. As a condition of subdivision approval, connection to any proposed wastewater collection, treatment and disposal systems must be approved and permitted under all applicable state law.

- (a) The applicant shall install a complete public sanitary sewer system, including mains, manholes, services to the property lines and all other appurtenances, separate from the storm water drainage system, to the approval of the Town Engineer.
 - (b) Construction procedures and materials shall conform to the standards of the Public Works Specifications and the Town’s Wastewater Ordinance.
 - (c) The system shall be designed in conformance with the applicable standards of the State Department of Environmental Conservation.
 - (d) The system shall be of a size adequate to accommodate anticipated sewage disposal needs of potential development beyond the property being subdivided in accordance with sub-section 4.1(T) of these Regulations.
 - (e) If the sewer capacity required for the development exceeds the current allocation for the parcel(s) as noted on the approved “Town Of Essex Sanitary Sewer Core Area” map, the applicant shall be required to obtain additional wastewater allocation from the Selectboard in accord with the Town’s Sewer Allocation Ordinance.
- (2) The Planning Commission may approve subdivisions that are not connected to the public sewage disposal system if the development is located outside of the sewer core area as delineated on a map entitled “Town of Essex Sanitary Sewer Core Area”, or if the Planning Commission determines that service to each lot by a public sanitary sewer system is not feasible or is not consistent with the Town Plan and applicable Town policies.

4.10 Stormwater Management and Erosion Control: All proposed subdivisions shall include a stormwater management and erosion control plan in accordance with the Town’s Stormwater Management Ordinance (Chapter 10.20 of the Municipal Code).

- (A) The plan shall address stormwater management and erosion control during construction as well as permanent provisions for after construction.
- (B) The plan may utilize any of a number of appropriate management techniques, provided that they conform to the Town’s regulations. Techniques may include but are not limited to swales, infiltration basins, sedimentation basins, retention ponds, as well as manufactured systems such as filters and treatment chambers.
- (C) A homeowners association or other organization shall be established with full responsibility for maintaining the permanent stormwater management system.