

A Street Tree Inventory

The Town of Essex Outside the Village of Essex Junction, Vermont

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EXECUTIVE SUMMARY

In June 2002, the Town of Essex outside the Village of Essex Junction, conducted an inventory of its street and park trees. The species, size and condition of each tree were noted, and their maintenance needs identified. All trees and all vacant public sites with the potential for tree planting were mapped and will be incorporated into the Town's Geographic Information System (GIS) by the summer of 2003. A street tree inventory was needed to establish a baseline of information from which the Town can derive a long-term urban forestry management plan. Any future management plan should be proactive in nature, eliminating the need for crisis management scenarios and the associated high management costs.

The Town of Essex Community Development Department oversaw the inventory. Funding was acquired through a grant from Vermont's Urban and Community Forestry Program (a joint initiative between the Department of Forests, Parks and Recreation, UVM Extension, and the USDA Forest Service).

Overall results of the inventory are as follows:

Table 1-1

Park and Street Tree Totals	
Tree Type	Total # of Trees
Street Trees	1,240
Ethan Allen Park Trees	146
Sand Hill Park Trees	57
Overall Total	1,443

- 1,443 trees (Street and Park trees) inventoried
- 31 different tree species identified
- 1,890 potential vacant planting sites
- 68 hazard tree assessments recorded

Regarding the condition of Essex's tree population, the majority (80%) falls within the range of fair to good. The greatest percentage of the Town's tree population is in the 1-12 inch diameter class, with the remaining percentage comprised of larger trees measuring 13 to 43 inches in diameter. Therefore, Essex incorporates a sustainable size class distribution of young healthy trees measuring 12 inches in diameter breast height (DBH: 4½ feet from ground level to breast height) or less.

Tree size, population, and associated conditions in Fort Ethan Allen Park contrasts with the overall inventory results. A majority of the Park's trees fall in the 13 to 43 inch diameter class. Ethan Allen Park is home to several older trees of declining health that are often subject to severe and extensive heartwood decay. Sand Hill Park includes younger trees, and both parks have numerous planting locations available.

Essex should work to protect and develop an urban forest infrastructure that is healthy and diverse in appropriate species population and age. Specific goals for an Essex urban forestry management plan should be to focus on the maximum enhancement of the environment and its social, economic, and aesthetic values to the community while reducing tree hazard risks to the public, and protecting property. General goals of such a plan include building upon and maintaining Essex's urban forest. Lastly, specific recommendations for new tree plantings in Fort Ethan Allen Park, Sand Hill Park, and the Town Common are provided.

METHODOLOGY

A Planning Technician, with a specialization in Urban Forestry, was hired by the Town of Essex to coordinate the inventory, serve as a contact for volunteers, and prepare a final report based on the inventory results. The Community Development Department was responsible for the inventory, and funding was provided by a grant from Vermont's Urban and Community Forestry Program (a joint initiative between the Department of Forests, Parks and Recreation, UVM Extension, and the USDA Forest Service).

The streets and parks selected were prioritized, beginning with first priority streets and parks, followed by second priority streets and parks, etc. Prioritization, completed by Town Administrators, was based on an examination of arterial roads in the Town, especially those viewed by residents and visitors every day. Residential streets were selected based on the age of the development and to allow for comparisons between old and new communities within the Town of Essex.

On June 1, 2002, 25 volunteers attended a six-hour training course. This course included a detailed explanation of what street tree inventories are, and why they are crucial for communities that want to maintain and improve the health of their urban forests. The following additional topics were addressed:

- Proper tree inventory techniques including the use of Palm Pilot hand-held computers
- Tree species identification and tree health issues
- Mapping formats for trees and vacant public planting sites

Teams of volunteers, in groups of three to four people, inventoried priority streets. Town staff inventoried parks. All teams were under the direction of the Planning Technician and Planner. These two individuals provided technical support, field coordination, and also answered any questions that arose. Each team had one Palm Pilot computer at their disposal. In addition, each group was provided with GIS maps for each site they were to inventory. At each inventory site the following information was recorded:

- Location of public right-of-ways (ROW's)
- Street tree species, size and overall condition in ROW's were recorded

Potential vacant planting sites, within the public ROW, were also recorded by using the 50-foot on center spacing for new street tree plantings set by the *Town of Essex Outside the Village of Essex Junction Zoning Regulations*. Other pertinent information included the parcel address, green belt size (designated area in ROW for planting) and the presence of overhead and underground utility lines.

Each team worked independently and scheduled available times for inventory within the group. Limitations encountered during the inventory mainly involved volunteer time constraints, an inability to use Palm Pilots in the rain, and only a month to record data using the Palm Pilots.

As each team completed their component of the inventory, each street tree site was identified and evaluated. Tree species were recorded, and size was evaluated by DBH. Tree health and site conditions were also noted. Streets that were without trees, but did provide vacant planting sites, were identified and inventoried as well. Trees located five feet outside of the public ROW were defined as Community Resource Trees (CRT). A CRT is not a public tree; instead it is a tree located on private land, which provides considerable benefits to the community because of its location, size or character. All the data collected was downloaded each day, so if there was a failure with the hand-held computers, no information could be lost.

Volunteers inventoried trees through June 26. On June 29, all of the information collected to this point was presented in a Power Point presentation to the volunteers. Several volunteers continued inventorying into the third week of July, as did the Planning Technician and Planner.

Picture 2-1



Classroom Training

Picture 2-2



Field Training

Picture 2-3



Palm Pilot Training

INTRODUCTION

As noted in Chapter 10 of Essex's *2001 Town Plan*, goal #3 is to "Improve the aesthetic quality of the Essex landscape and increases resident's enjoyment of their surroundings. Landscape improvements are especially important along high profile streets and public spaces, and are as important for their winter contributions as for their summer presence." This and other similar goals and objectives proved to be the major thrusts behind this project.

There are numerous benefits from a street tree inventory that examines the health and management needs of a community's street tree population. Trees are a vital component of a healthy urban ecosystem and are part of the Town's infrastructure. Trees reduce air pollution, and cool buildings and landscapes. It is common

knowledge in the real estate industry that healthy trees can increase property values as much as 19%, in addition to providing aesthetic value to the landscape and habitat for wildlife. Trees, shrubs and ground layers can reduce erosion, and aid in the purification of non-point source storm water runoff, reducing the costs of stormwater management and treatment. A completed street tree inventory can also be used to track the conditions of established trees, select future planting sites, and formulate a tree species planting list specific to the Town of Essex. From here, urban forestry management plans can be formulated as the next step. A management plan establishes the broad goals and objectives for all involved organizations so the specific management needs of this community are addressed.

Local and non-local citizen volunteers conducted the inventory, donating 330.40 man-hours. If a professional urban forester were contracted to perform this work, the equivalent cost would be calculated at a rate of \$40 - \$60 per hour, or approximately \$13,216 - \$19,824. Through a \$4,000 grant, a Town match of \$5,200, and the efforts of local volunteers (\$3,300), the same goal was accomplished for a considerably lower sum of \$12,500.

STREET TREE INVENTORY

Overall Findings

Approximately 85% of the Town of Essex's street and park trees were inventoried in the summer of 2002 (Refer to Appendix A for a list of charts, graphs, and tables, Appendix B for a list of inventoried streets, and Appendix C for all inventoried sites). Some overall results included the following:

- 1,443 trees inventoried (Street trees 1,240; Park trees 203)
- 31 tree species identified
- 15 tree stumps (8 Street trees, 7 Park trees)
- 130 potential tree removals
- 1,890 potential vacant planting sites (Streets and Parks)
- 68 hazard tree risk assessments needed

Geographic Distribution

There is a noticeable contrast in the geographic distribution of Essex's street trees. Numerous streets have very young trees. For instance, the Village at Old Stage and the Meadows Edge developments are both relatively new communities. Although the trees here are young and in good health, many require pruning. Numerous intersections in these developments have line of sight issues for drivers, and pedestrian intrusion occurs along several sidewalks because of recent growth. Both of these issues need attention. In newer communities, streets such as Sydney Drive and Hagan Drive in the Woodlands can contrast dramatically to communities similar in age. Although there is a notable absence of street trees here, there is an abundance of appropriate vacant planting sites within the green belts (8-12 feet wide).

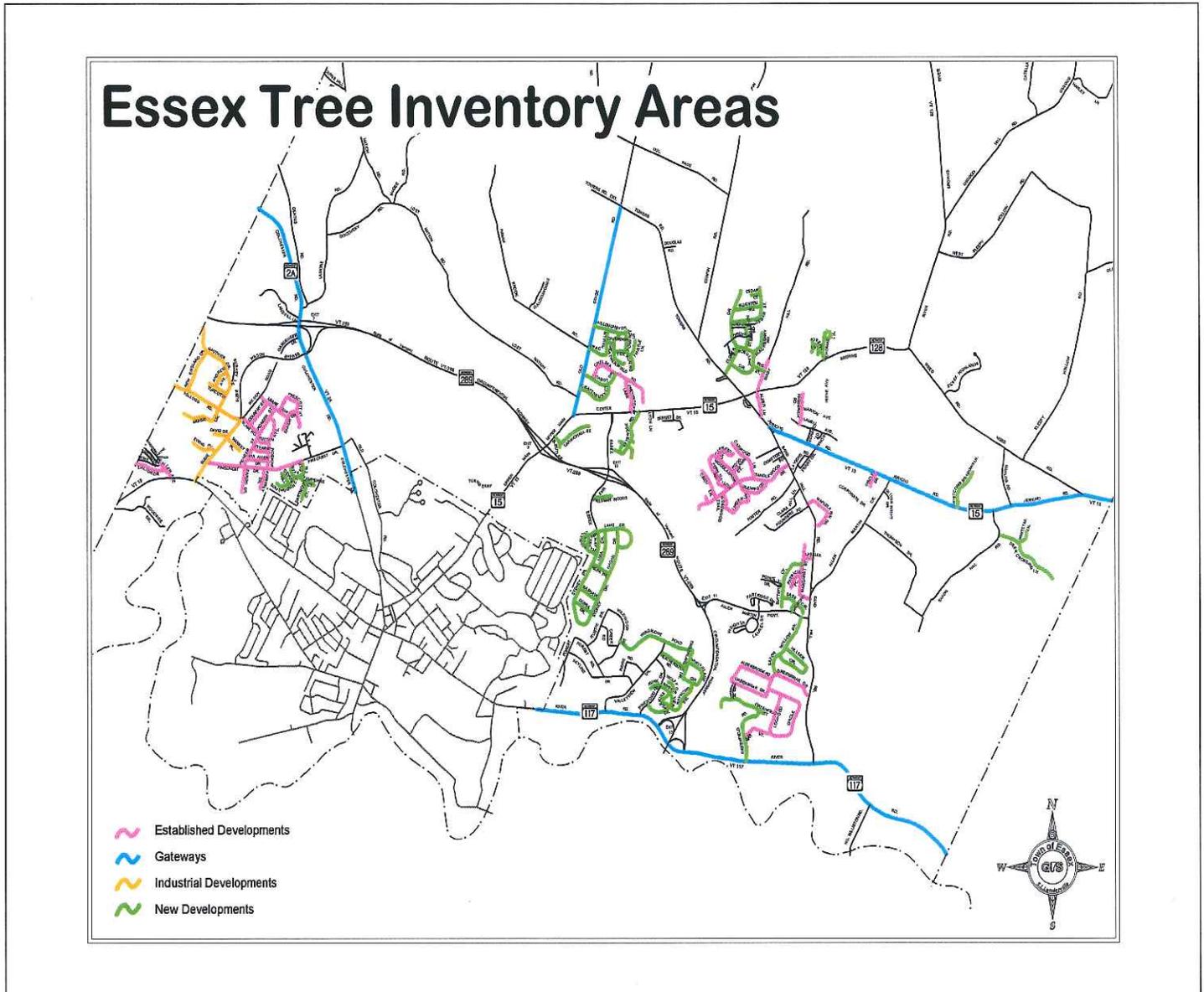
Painesville Manor, Forestdale, and Birchwood Manor were developed in forested areas, or retained existing trees; therefore, these communities have a much older tree canopy in contrast to the aforementioned areas. Also, these areas frequently did not incorporate sidewalks. Because of the larger and more mature tree canopy, safety pruning is the priority for these neighborhoods.

Susie Wilson Road with its surrounding commercial landscape, contrasts with the residential areas. Although it has some newly planted ornamental trees, there are fewer planting sites and fewer mature trees. The abundance of vehicular traffic, asphalt, concrete, and winter road salt creates a harsh microclimate for street trees in this area.

Finally, Sand Hill Road to Allen Martin Drive contrasts with all other areas of Town because it is a woodland site, consisting predominantly of conifers. The trees along the walking path parallel to the road need to be pruned, and the encroaching small pioneer species require removal. Green Mountain Power completed extensive pruning on trees adjacent to their power lines during March of 2003. Due to the density and proximity of the existing woodland to the street ROW, no further tree planting is recommended.

Contrasts in the geographic distribution of Essex's street tree population is indicative of the need to tailor tree management priorities that are specific to individual neighborhoods. Each street's individual maintenance and planting needs are identified in the completed street tree inventory found in Appendix C.

Map 4-1



Species Distribution

In the Town of Essex at least 31 tree species were identified, reflecting a diverse tree population. As shown in Table 4-1, the tree species are not evenly dispersed. The greatest percentage is attributed to Green Ash, followed by Norway Maple and then Red Maple. A substantial population of mature conifers (ex. White Pine)

are located in older neighborhoods throughout Essex. Conifers are not desirable as street trees because their low branching habit interferes with vehicular and pedestrian traffic along roadways. However, conifers located in parks and woodlands are desirable and new plantings are encouraged.

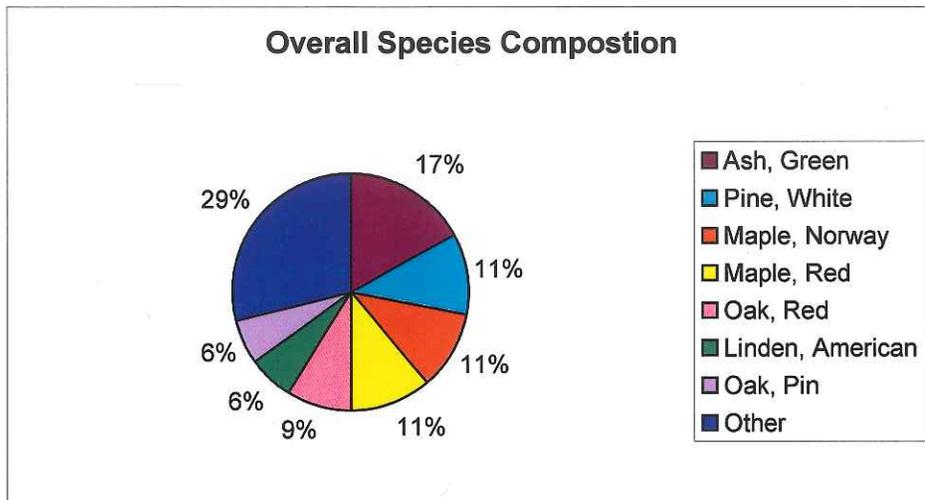
Populations of weak-wooded species including Silver Maple, Poplar, and Birch have a small representation in the inventory. Weak-wooded species are usually fast growing with poor branching habits, and often produce included (overlapping) bark, further compromising structural integrity.

In the urban forest, monoculture mass plantings may present problems by increasing the risk of a single pathogen destroying an entire tree population. Dutch elm disease devastated the American Elm population in North America in the first half of the twentieth century, and presently the Asian Long Horned Beetle threatens the health of the most predominant tree genus in Vermont, the Maple Family (Acer). Therefore, Essex must continue to require a mix of tree species to ensure the future health and vitality of the urban forest.

Table 4-1

Overall Species Composition		
Species	# of Trees	Percent of Population
Ash, Green	230	15.94%
Maple, Norway	153	10.60%
Maple, Red	151	10.46%
Pine, White	141	9.77%
Oak, Red	121	8.39%
Linden, American	85	5.89%
Oak, Pin	76	5.27%
Maple, Sugar	63	4.37%
Honeylocust	63	4.37%
Crabapple	47	3.26%
Pine, Scotch	43	2.98%
Oak, White	37	2.56%
Pine, Red	19	1.32%
Spruce, Blue	13	0.90%
Maple, Silver	12	0.83%
Aspen, Trembling	10	0.69%
Birch, Paper	9	0.62%
Linden, Littleleaf	9	0.62%
Cedar, White	7	0.49%
Beech, American	4	0.28%
Spruce, White	4	0.28%
Cherry	4	0.28%
Spruce, Norway	4	0.28%
Pear	3	0.21%
Ash, White	3	0.21%
Boxelder	3	0.21%
Serviceberry, Allegheny	3	0.21%
Hemlock	3	0.21%
Locust, Black	2	0.14%
Beech	2	0.14%
Poplar, Hybrid	2	0.14%
Spruce, Red	1	0.07%
Willow, Weeping	1	0.07%
Elm, American	1	0.07%
Aspen, Bigtooth	1	0.07%
Beech, European	1	0.07%
Lilac, Japanese Tree	1	0.07%

Chart 4-1



Size Distribution

Essex's street and park tree population graph illustrates that approximately 50% of the street trees inventoried are found in the 0-6 inch diameter class. Most of these trees are newly planted and their care and culture should be a high priority for maintenance. Since these trees are relatively young, proper pruning and maintenance will greatly increase their survival rate and reduce future costs. The disparity between the numbers of young and mature trees reflects the numerous new neighborhoods that have been established in Essex over the past decade.

Trees that are mature or nearing the end of their life expectancy often received the poorest condition ratings. Condition ratings tend to be the best for young trees and worsen as trees reach their maturity and start to decline in health. Chart 4-2 details the size of trees, in descending order from the smallest to the largest class of trees.

The size distribution of Essex's park trees differs from the street tree population. Fort Ethan Allen Park has mature stands of hardwood trees in varied states of health. Many of these trees are aged, and most suffer from past winter storms, summer droughts and people pressure diseases (PPD's) like compaction. Sand Hill Park has numerous plantings of ornamental trees, cluster plantings of conifers, and a row of healthy Green Ash fronting Sand Hill Road. Chart 4-3 details the condition ratings for both street and park trees.

Chart 4-2

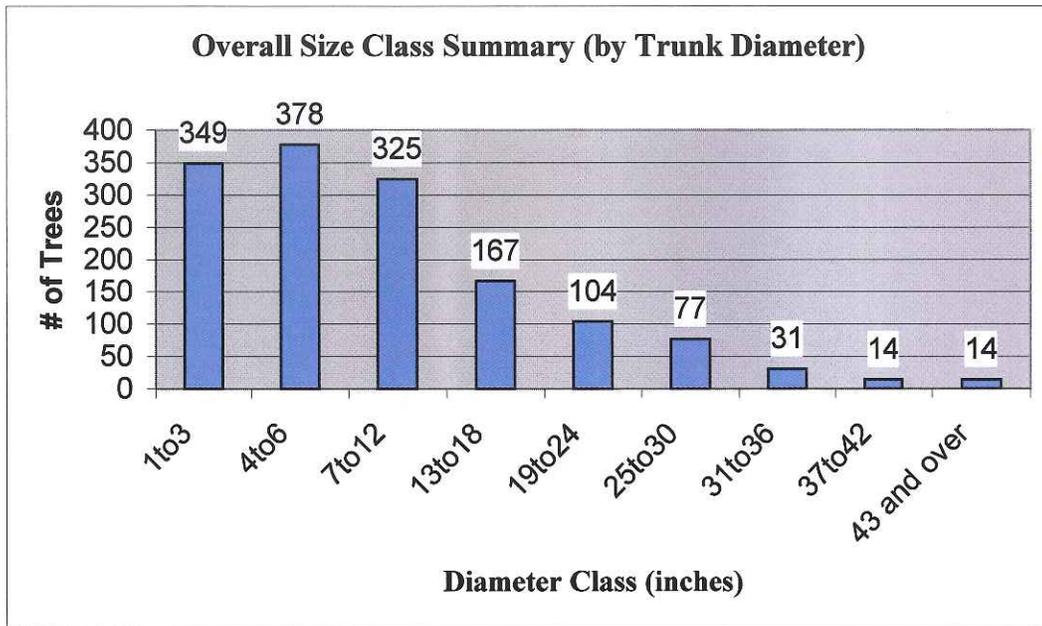
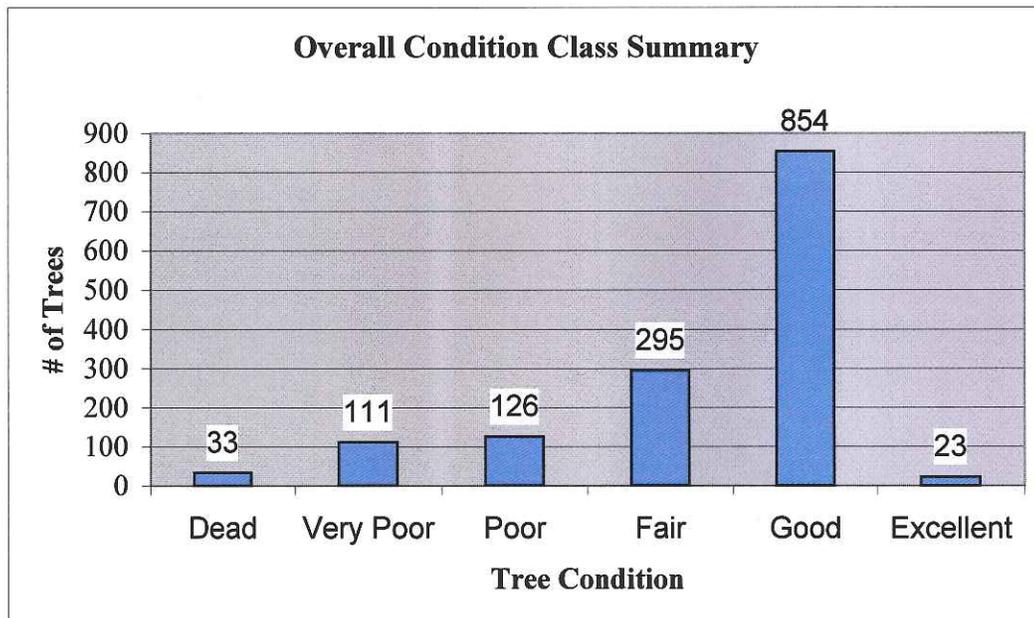


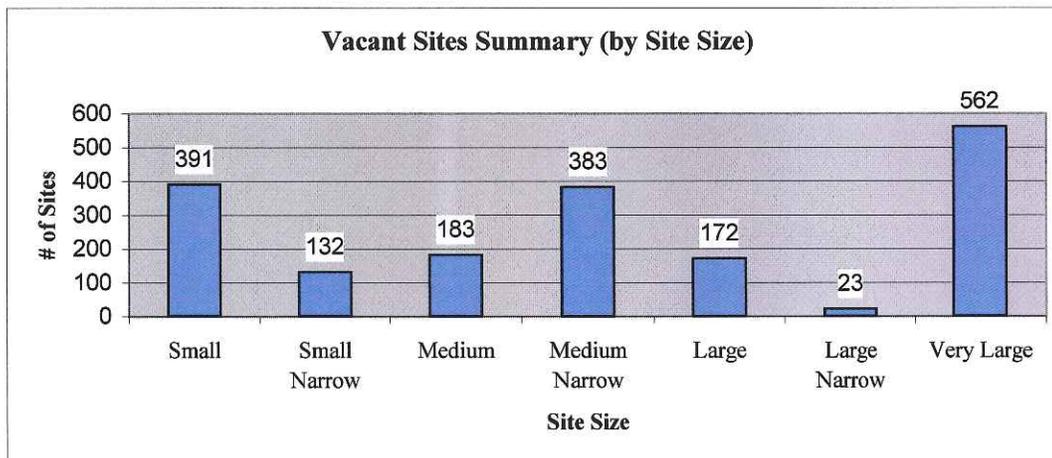
Chart 4-3



Potential Vacant Planting Sites

Volunteers inventoried existing street trees and vacant planting sites within public ROW's that offered potential for future tree planting. A total 1,890 potential planting sites were identified. For each site, the appropriate tree size was determined, and sites were mapped and recorded accordingly. Chart 4-4 illustrates potential planting sites by the size of tree suitable in that location. Vacant planting sites represent the future vitality of the Essex community, especially sites deemed "very large" due to their potential impact on stormwater reduction and property values.

Chart 4-4



Maintenance Needs

Proper tree maintenance is a critical component of any urban forestry management plan. Care and attention of a tree improves its health and increases its chances for survival. As survival rates increase, replacement costs decrease; more trees become established and reach maturity. The following highlights general maintenance needs as identified by the tree inventory:

- Proper mulching of trees should be completed. Problems are created when trees receive too much mulch and begin to look like they reside inside a volcano. Opportunistic pathogens such as cankers (fungus) become established when mulch and moisture collect against the bark of a tree. Mulching too deeply can also inhibit tree root respiration; only two to three inches of mulch are recommended.
- Proper pruning removal techniques should be addressed and conform to the *American National Standard for Tree Care Operations- Tree, Shrub and Other Woody Plant Maintenance (ANSI A300 Pruning Standard)*.
- Young trees are easiest to prune because pruning can be completed from the ground. Pruning at a young age benefits the tree measurably and is a proactive approach to tree care. Volunteers and staff can address these pruning needs without retaining a certified tree climber.
- Proper species selection, size, and placement are critical for a tree's long-term survival. The guide *Recommended Trees For Vermont Communities: A guide to selecting and purchasing street, park, and landscape trees* is appropriate.
- Irrigation is a priority for new plantings and is often not addressed properly.
- *An International Society of Arboriculture (ISA) Certified Arborist* should supervise the pruning and removal of older and mature trees, with either an *ISA Certified Arborist or an ISA Certified Tree Worker* completing the work.

Improper Tree Planting/Maintenance Examples

Picture 4-4

Improper mulching. The mulch is too deep and can harbor opportunistic pathogens that may eventually kill the tree (Willoughby Drive).



Picture 4-5

Planting too high above grade and directly adjacent storm water infrastructure where roots may cause damage (Essex Town Center).



Picture 4-6

Treated burlap does not decompose over time, and will eventually strangle the tree as it grows (Susie Wilson Road).



Improperly Sized Tree Planting Examples

Picture 4-7

The tree root ball is too small to sustain a tree of this size (DoubleDay Lane).



Picture 4-8

The selected tree species are too large for the small four-foot wide green belt (DoubleDay Lane).



Hazard Tree Assessment

As part of the inventory, any trees that showed signs of potential hazard such as significant deadwood, trunk decay, or cavities, were identified. Either the Town Tree Warden or an *Urban Forester/ISA Certified Arborist* needs to revisit these trees and complete a detailed hazardous tree assessment. Vermont's Urban and Community Forestry Program utilizes a standard tree evaluation process. This process evaluates the crown,

trunk, and root conditions, and rates the probability of failure. Every tree evaluated was given a rating between one and four (one being the highest need) prioritizing the need for removal or pruning over the next five years.

Hazard Tree Examples

Picture 4-9

Large Sugar Maple showing clear signs of declining health (Dalton Drive).



Picture 4-10

Hazard Tree Assessment needed (Old Stage Road).



GATEWAYS

Site Descriptions and Recommendations

Major roads entering the Town that are highly traveled by motorists are “gateways” because they are the first, or only, impression that a traveler may have of a community. Gateways offer a first impression to the passing motorist of the economic and environmental health of the Town, and might even shape their opinions on whether or not to locate within that community. The tree inventory findings on gateways into the Town of Essex are described in this section.

Old Stage Road (Butlers Corner to Willoughby Drive)

Old Stage Road, from Willoughby Drive south to Cabot Road, is an optimum tree-planting site because a large greenbelt area exists adjacent the sidewalk. Across the street the greenbelt is located underneath utility lines, allowing only small ornamental trees to be planted. Between Cabot Drive and Butler’s Corner, several older trees were inventoried. One tree, a large Sugar Maple with an extensive trunk cavity, has had its structural integrity severely compromised. As a result, this tree is identified as needing a hazard tree assessment and should be removed as soon as possible.

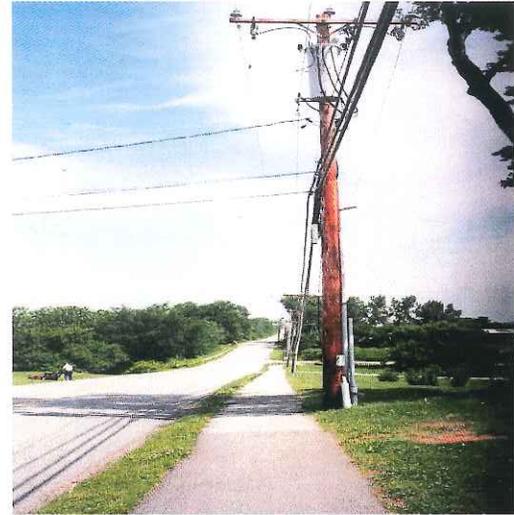
Picture 5-11

Sidewalk and overhead utility lines looking toward VT Rte 15 (Old Stage Road).



Picture 5-12

Sidewalk and overhead utility lines looking toward Westford (Old Stage Road).



River Road/Vermont Route 117 (Village Line to Sand Hill Road)

Moving toward the Village of Essex Junction, from Sand Hill Road to Greenfield Road, a small area of potential planting sites exists underneath overhead utility wires. The opposite side of the road contains a drainage culvert that is not appropriate for tree plantings. From the entrance of VT Route 289 to Pinewood Drive, numerous opportunities for planting street trees, shrubs and wildflowers/perennials exist. The center traffic islands found here are suitable for herbaceous plantings. Snow removal needs for the roadway render this site unsuitable for trees or shrubs.

Picture 5-13

Overhead utility wires looking toward the Village of Essex Junction (River Road/VT Rte 117).



Upper Main Street/Center Road/VT Route 15 (Billie Butler Drive to Sand Hill Road)

The *Vermont Route 15 Street Tree Master Plan* prepared by Robert A. White, ASLA, Julie Campoli and volunteers from the Town of Essex, should be implemented in this corridor. The suggested list of trees for street tree planting remains applicable, with the exception of Norway Maple. Norway Maple is an exotic invasive plant, and as in many other states, is becoming a problem in Vermont. Norway Maples compete with and eventually displace Sugar Maples and other native species.

Picture 5-14

Herbaceous flowerbed plantings located at the entrance to the Essex Town Center (VT Rte 15 and Billie Butler Drive).



Picture 5-15

New street tree plantings required by Town of Essex Zoning Regulations (VT Rte 15/Center Road).



Colchester Road/VT Route 2A (Colchester Line to Village Line)

Most of Colchester Road parallels the railroad tracks, limiting public planting opportunities. However, there is opportunity to incorporate native meadow plantings in the grass areas adjacent to the tracks. Because the meadow plantings would fall in the State ROW, the state should be consulted. As one approaches the Village of Essex Junction, several small vacant greenbelts also illustrate potential for street tree planting.

Picture 5-16

Numerous grassy areas exist adjacent to the railway tracks on VT Rte 2A. These areas may be suitable for native meadow plantings (Colchester Road/VT Rte 2A).



VT Rte 15/Jericho Road (Sand Hill Road to Jericho Line)

The landscape along this gateway is a mix of rural farmland and centuries old residential homes. A unique opportunity exists to plant wildflowers in the greenbelt surrounding a scenic overlook where a mature American Elm stands. Traveling toward Jericho on VT Rte 15 a large yellow barn is noted on the north side of the road. Further plantings of wildflowers might be incorporated into the surrounding greenbelts at this site to enhance the landscape. Finally, as one enters the built up areas of Essex, potential planting sites become limited because of existing trees and an abundance of overhead utility wires.

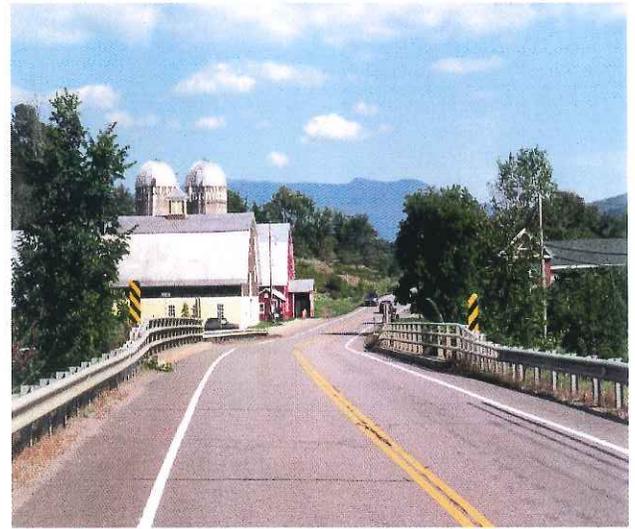
Picture 5-17

A lone American Elm tree greets visitors to the Town of Essex as they cross the Town line from Jericho (VT Rte 15).



Picture 5-18

Barns on the Whitcomb farm frame the view of mountains east of the Essex urban area. (VT Rte 15)



Picture 5-19

Greenbelts adjacent to VT Rte 15 provide future planting opportunities (VT Rte 15/Jericho Road).



Picture 5-20

Numerous overhead utility lines, encroached upon by conifers, are visible when entering the urbanized area of Essex (VT Rte 15/Jericho Road).



Overall Gateway Recommendations

Many of the aforementioned gateways contain limited tree planting opportunities. Native meadow plantings and non-native wildflower plantings are highly recommended for use in those gateway areas that are not suitable for trees. Cluster plantings of trees can also be used to maximize aesthetic value where only a few planting opportunities exist. In addition, windshield surveys should be completed of these areas annually and after any major storms to identify hazard trees.

PARK TREE INVENTORY

Fort Ethan Allen Park

Site Description

Fort Ethan Allen Park is an urban park that receives a high level of public use. Numerous sports fields are present, and a jogging track loops the park. There is also one large playground located near Dalton Drive, inside the Colchester side of the park.

A combination of soil compaction, urban stresses, past droughts, and recent storm damage is compromising the health of these trees. Many trees exhibit extensive crown dieback, and major trunk and crown cavities also exist on the trees. Maintaining the health of existing trees in Fort Ethan Allen Park by incorporating a total plant health care program and planting appropriate species is paramount to the park's long-term sustainability. Initiatives like these will help insure that a healthy, vibrant urban forest will exist and flourish for future generations to enjoy.

The following planting sites and accompanying plant lists relate to the existing woodland/canopy area, jogging track, and a proposed Pinetum (an area dedicated to the planting of pine/conifer tree species).

Planting Recommendations

Woodland/Canopy

Select canopy plantings (deciduous trees) should be sited throughout the park where trees have died or been lost to storms. All suggested tree species for those areas with established stands of canopy trees are chosen because of aesthetic value, suitability for urban sites, and compatibility with the climate zones in Vermont. The recommended tree species are as follows:

- *Quercus rubra* - Red Oak

This is an excellent tree for planting in public parks. Tolerates compaction and air pollution well, and has a great russet to red fall color.

- *Quercus alba* - White Oak

There are several specimens established and thriving in Fort Ethan Allen Park. The tree has a long lasting burgundy to yellow fall leaf color.

- *Celtis occidentalis* - Hackberry

Tolerates drought, stress, and pollution. Native tree, well adapted to the cold and provides good animal habitat.

- *Ginkgo biloba* - Ginkgo

Plant only the male species. The fruit of the female has a very unpleasant odor. Wonderful winter form; has consistent, bright yellow fall color, and is one tough tree.

- *Aesculus hippocastanum* - Common Horsechestnut

Exhibits large panicles of pinkish - white flowers in spring. Best used as selected specimen plantings for focal points.

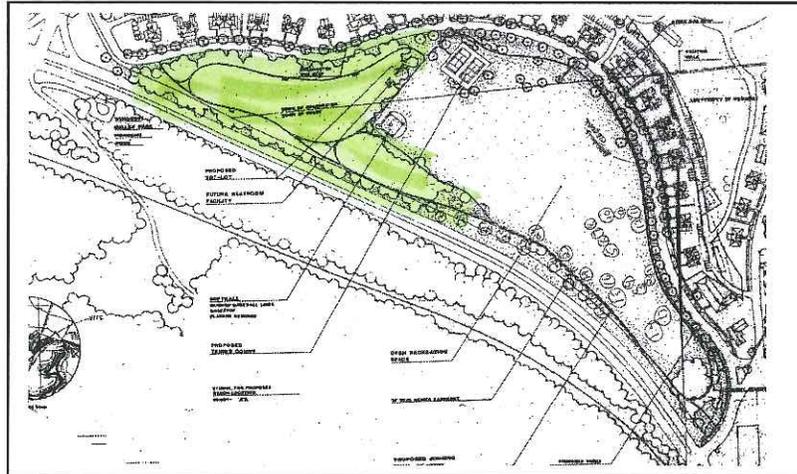
- *Acer rubrum* - Red Maple

This is a great park tree and a native species to Vermont. Excellent fall color can be red or yellow. Nice effect when conifer trees are used as a backdrop.

- *Acer saccharum* - 'Green Mountain' Green Mountain Sugar Maple

More heat tolerant than the straight species. Great for open spaces with room to grow. Vermont is world-renowned for Sugar Maples.

Map 6-2 (Woodland/Canopy Planting Areas - Fort Ethan Allen Park)



Jogging Track

The following understory tree species or plantings are suggested for those areas located around the jogging track. These tree species will create shade and add aesthetic value to the area.

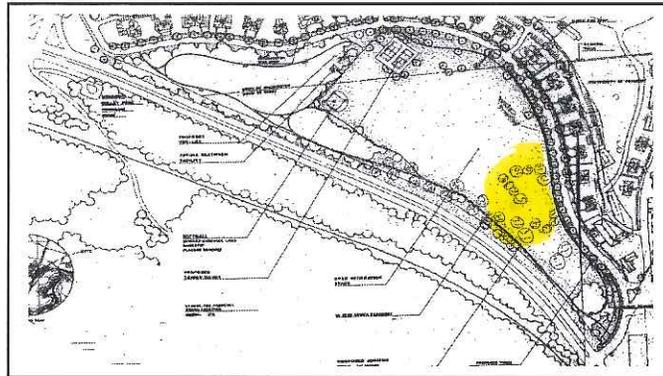
- *Prunus sargentii* - Sargent Cherry

This is a very popular cherry tree for landscape use. It has handsome bronze bark and lustrous fall foliage. Pink flowers in early summer.

- *Syringa reticulata* - Japanese Tree Lilac

the Essex Parks and Recreation Department and the Town Tree Warden need to be consulted when selecting an appropriate Pinetum site. A community meeting is also recommended to discuss this proposed Pinetum and its location, before any planting plans are implemented.

Map 6-4 (Pinetum Planting Area - Fort Ethan Allen Park)



Sand Hill Park

Site Description

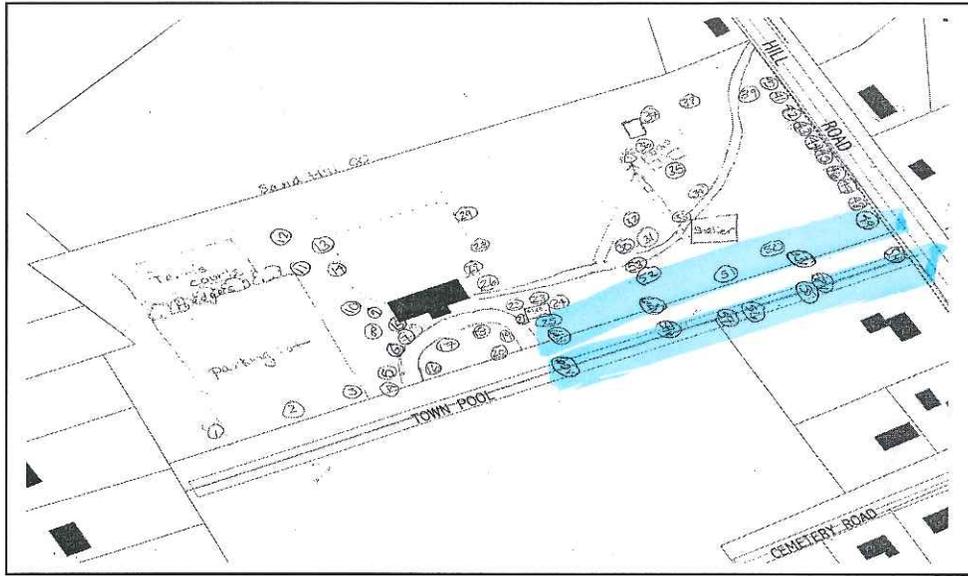
Sand Hill Park is much smaller than Fort Ethan Allen Park. There are far fewer canopy trees present, thus high maintenance needs are limited. There are several species of understory trees in the park, including Crabapple, Japanese Tree Lilac, and Shadbush that require maintenance. A first priority for tree planting in Sand Hill Park is to encourage roadside plantings that help frame the entrance to the park. Large shade trees and further plantings of flowering ornamental trees will accomplish this.

Planting Recommendations

Chinese Elm, *Ulmus parvifolia*, is proposed for the canopy planting; it is a very tough, durable tree and an excellent choice for this location. Foliage of the Chinese Elm is dark green, and fall colors range from yellowish to reddish purple. The bark of this tree is of great interest with a striking mottled combination of gray, green, orange and brown. A pleasant somewhat rounded canopy is provided, with pendulous branching. Finally, this tree has considerable resistance to Dutch elm disease. There are no Chinese Elms identified in the street tree inventory, and this is an opportunity to introduce this species to the area. If Chinese Elms are not found to be readily available at local nurseries, the Japanese Zelkova, *Zelkova serrata*, is an excellent replacement in the Sand Hill Park setting.

Japanese Crabapple, *Malus floribunda*, is proposed for the ornamental planting component. The Japanese Crabapple produces a clear white flower with an accompanying sweet fragrance, and the fruit is yellow and red. Since there are so many species of crabapple trees to choose from (700 plus) it is wise to use the Japanese Crabapple as the benchmark when making a selection.

Map 6-5 (Chinese Elm/Ornamentals Planting Area Sand Hill Park)



Town Common

Site Description

Located near the corner of VT Route 15 (Jericho Road) and VT Route 128 (Brown’s River Road) is the Essex Town Common. The Town Common is a small public green space, which serves as a gathering/rest area for the public and visitors alike. A new pedestrian/bike path is scheduled for completion by the summer of 2004, which will lead to the Common and bring additional pedestrian traffic to the site. Presently, only a few established trees are located within the Town Common. Sugar Maple and Red Oak are the largest canopy trees present.

Recommendations

Essex’s Town Common area is conducive to additional plantings of understory trees and perennial herbaceous plant material. Suggested woody plant material for this site may consist of, but is not limited to the following species: Cornelian Cherry, Shadbush, and Crabapple.

Enhancement of the area by using perennial herbaceous plant material could reduce annual planting costs. As plants mature and spread over time, they may be divided and used elsewhere in the Town, for no additional cost. Suggested species for the site may consist of, but is not limited to the following species: Purple Cone Flower, Gallardia, Stella D’oro Day Lily, Bee Balm, and Russian Sage with assorted Daffodils and Crocus. Hopefully additional benches and picnic tables will also be added as landscaping/pedestrian improvements are incorporated.

Picture 6-21

View of the Essex Town Common. Notice the limited size of the Common for supporting future plantings, especially with the proposed construction of a six foot wide sidewalk adjacent VT Rte 15 (Jericho Road).



OVERALL RECOMMENDATIONS

Strategy 3.1.1 of the *2001 Town Plan* states that Essex will: “Develop a Tree Inventory and Management Plan for trees within the Town right-of-way, in parks, and on Town property. This inventory is a crucial step in prioritizing tree maintenance needs, and an important step toward improving the health and appearance of existing public trees. The Tree Inventory should also include a 5 year plan that identifies strategies for planting and maintaining public trees (e.g. applying for grants, organizing volunteers, etc.)”

Given strategy 3.1.1., an overall recommendation is for Essex to develop urban forestry management plans with the data gathered from this tree inventory. The urban forest is a visual and immediate representation of the health of a community’s infrastructure. Urban forests impact residential and commercial property values, as well as the economic and environmental health of a town. A healthy urban forest could be what attracts people to a community during their initial visit.

To make strategy 3.1.1. a reality, the following is recommended:

- All future street tree planting and park tree planting for the Town of Essex should achieve a healthy and balanced distribution of species with no more than 10% of any genera and 5% of any species. Both native and non-native plant species are recommended for street trees. Any non-native plant species must not be on the State classified invasive plant list. The publication “*Recommended Trees for Vermont Communities: A guide to selecting and purchasing street, park, and landscape trees*” is an excellent reference when selecting appropriate tree species for planting.

- A Tree Board for the Town of Essex should be established. The mission of the Tree Board would be to address the needs and concerns of the Town regarding its urban forest. A Tree Board, along with either the guidance of an urban forester, or the Town Tree Warden, would interact with municipal, state, and federal agencies, as well as civic organizations, to secure assistance in the care, culture and management of Essex's urban forest.
- Educational programs should be formulated through the Essex Parks and Recreation Department, to train staff and volunteers in proper tree care techniques.
- The creation of a Citizen Tree Tender program should be a priority. A Citizen Tree Tender program offers local volunteers training and equipment to manage the urban forest. Recently St. Johnsbury, Vermont started a program. St. Johnsbury's program and programs in other New England communities are preferable for use as a model. Philadelphia, Pennsylvania also maintains an excellent program.
- Educational and vocational programs available in the Chittenden County area such as the Northlands Job Corps, the Essex Technical Center, and Vermont Youth Conservation Corps can be utilized in the pruning, planting and removal of both park and street trees. Northlands Jobs Corps recently pruned the Green Ash trees fronting Sand Hill Park.
- A small tree and shrub nursery could be created. Native and non-native plant species may be propagated and grown in the nursery. The trees grown here can then be used as new street tree plantings, park tree plantings, and for woodland restoration projects. Both volunteers and town staff may manage this nursery. Cost savings might also be realized if the Town grew its own replacement stock with volunteer labor or working with the Essex Tech Center and its students.
- Encourage participation of Essex residents in S.O.U.L. (Stewardship of the Urban Landscape) program. This is a 12-week course offered by the Vermont Department of Forestry and UVM Extension office. S.O.U.L. provides extensive training on the value of trees, their maintenance, and working with the public.
- Participation of Essex residents and municipal employees in the citizen pruner program offered by the State of Vermont should be encouraged. This program involves advanced hands on training for two days and covers topics such as tree identification, health diagnosis, landscape design, management, planting, pruning, preservation, and tree inventories. It also includes information on reviewing private sector proposals for tree management, planting, pruning, preservation, and tree inventories.
- Funds from the Town need to be allocated to formulate and fund both a comprehensive urban forestry management plan and urban forestry program. Urban forestry programs need to include Town staff in a leadership role - either through a full time urban forester, contract urban forester, or both. It also needs to incorporate community involvement, and be management plan based with detailed management policies/ordinances.

An accurate street and park tree inventory is fundamental to the formulation of a comprehensive Urban Forestry Management Plan for the Town of Essex. The information gathered in this street tree inventory is the basis for addressing future tree care needs and updating tree condition information. Management plans can now be formulated, resources secured, and management programs implemented. Essex's tree inventory serves as a solid foundation upon which the Town can build sound urban forestry management plans to serve the citizens of Essex and to insure future generations a healthy urban forest.

REFERENCES

1. American National Standard for Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance (ANSI A300 Pruning Standard).
2. Chapin, Gabriel, D., Recommended Trees for Vermont Communities: A guide to selecting and purchasing street, park, and landscape trees, Vermont Department of Forests, Parks & Recreation, 2001.
3. Dirr, Michael, Manual of Woody Landscape Plants, Fifth Edition, Champaign, Illinois Stipes Publishing, L.L.C., 1998.
4. Grey, Gene W., The Urban Forest: Comprehensive Management, John Wiley & Sons, Inc., 1996.
5. Raycroft-Meyer, Kathleen, ASLA, Street Tree Master Plan for the Village of Essex Junction, 1997.
6. Town of Essex 2001 Town Plan.
7. Town of Essex Outside the Village of Essex Junction Official Zoning Regulations.
8. White, Robert A. ASLA, Campoli, Julie and the volunteers from the Town of Essex, The Vermont Route 15 Street Tree Master Plan, 1995.
9. UVM Extension, Stewardship of the Urban Landscape (S.O.U.L.): Leadership Training To Promote Trees In Urban Communities, Spring, 2002.

APPENDIX A

LIST OF CHARTS, TABLES, PICTURES, AND MAPS

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APPENDIX B

LIST OF INVENTORIED STREETS

- ABARE AVE
- Abnaki Ave
- Acorn Cir
- Adams Ct
- ALDER LN
- ALDERBROOK RD
- Algonquin Ave
- ALLEN MARTIN DR
- ALLEN MARTIN PKY
- ANDREW AVE
- Arlington St
- Aspen Dr
- Athens Dr
- BAKER ST
- BASHAW DR
- Beech St
- BILLIE BUTLER DR
- Birch Ln *
- BIXBY HILL RD
- BLACKBERRY RD
- BLAIR RD
- BLUESTEM RD
- BOBOLINK CIR
- Briar Ln
- Brickyard Rd
- BRIGHAM HILL LN
- BRIGHAM HILL RD
- Brooks Ave
- Brookside Ave
- Brownell Dr
- BROWNS RIVER RD
- BURLINGTON RD
- BUSHEY LN *
- BUTTERNUT CT
- BUTTON DR
- CABOT DR
- Camp St
- CARDINAL LN *
- CARMICHAEL ST
- Cascade Ct
- Cascade St
- Cascadnac Ave
- CATELLA RD
- CAVENDISH DR
- CEDAR CT
- CEDAR ST
- CEMETERY RD
- CENTER RD
- Central St
- CHAPIN RD
- CHELSEA RD
- Cherokee Ave
- Cherry St
- Chestnut Ln *
- Church St
- CILLEY HILL RD
- CINDY LN
- CIRCLE DR
- CIRCUMFERENTIAL HWY

- CLARA HILL LN *
- Clems Dr
- CLOVER DR
- COLBERT ST
- COLCHESTER RD
- COL PAGE RD
- Corduroy Rd
- CORPORATE DR
- Countryside Dr
- CRAFTSBURY CT
- Cree Ave
- CREEK RD
- Crestview Rd
- Curtis Ave
- CURVE HILL RD
- Cushing Dr
- CYPRESS LN
- DALTON DR
- DAMON DR
- DARTMOOR CT
- DAVID DR
- DEBRA DR
- DEER CROSSING LN
- Densmore Dr
- DEVON HILL CT
- DISCOVERY RD
- Doon Way
- DOUBLEDAY LN *
- DOUGLAS RD
- Drury Dr
- Dunber Dr
- East St
- East Williams St
- Edgewood Dr
- Educational Dr *
- Elm St
- ESSEX HIGHLANDS
- ESSEX RD
- ESSEX WAY
- ETHAN ALLEN AVE
- EWING PL
- Fairview Dr
- FERN HOLLOW RD
- FOREST RD
- FOSTER RD
- FOUNDERS RD *
- FOX RUN RD
- FREDERICK RD
- FREEMAN WOODS
- Gaines Ct *
- GARDENSIDE LN
- GAUTHIER DR
- GENTES RD
- GLENWOOD DR
- Grandview Ave
- Grant St
- GRAY WAY
- GREENBRIAR DR
- GREENFIELD CT

- REPA DR
- RICHARD ST
- RIDGE RD
- Rivendell Dr
- RIVER RD
- River St
- RIVER VIEW DR
- Robinson Pky *
- RONALD CT
- Roscoe Ct *
- Rosewood Ln
- ROSEWOOD TRL
- Rotunda Ave
- RUSTIC DR
- RYAN ST
- SAGE CIR
- SAND HILL RD
- SAWMILL RD
- SAXON HILL RD
- Saxon Ln, Jericho
- SAXONHOLLOW DR
- SAYBROOK RD
- School St
- Seneca Ave
- Shawns Way *
- Silver Bow Ter
- SKYLINE DR
- SLEEPY HOLLOW RD
- South Hill Dr
- South St
- South Street Ln *
- South Summit St
- SOUTHDOWN CT
- Southview Rd
- Spruce Ln *
- St James Pl *
- STANNARD DR
- Stanton Dr
- STEARNS AVE
- STEEPLEBUSH RD
- SUFFOLK LN
- Sugartree Ln
- Summit St
- SUNSET DR
- SUSIE WILSON BYP
- SUSIE WILSON RD
- Sycamore Ln
- SYDNEY DR
- Taft St
- Tamarack Dr
- TANGLEWOOD DR
- Thasha Ln *
- THISTLE LN
- THOMAS LN
- THOMPSON DR
- THRUSH LN *
- Tiffany Ln *
- TIMBERLANE DR
- TOWERS RD

- TURCOTTE RD
- TURNBERRY RIDGE *
- Tyler Dr
- Upland Rd
- UPPER MAIN ST
- Vale Dr
- VALLEYVIEW DR
- Villa Dr
- WALDEN WOODS
- Walnut Ln *
- Warner Ave
- Waverly St
- WEATHERSFIELD BOW
- WEED RD
- Wenonah Ave
- West Hillcrest Rd
- WEST SLEEPY HOLLOW RD
- West St
- West Street Ext
- Whipple Dr *
- WHITCOMB MEADOWS LN
- Whitcomb Rd *
- WHITETAIL LN
- WILDWOOD DR
- Wilkinson Dr
- Willeys Ct
- Williams St
- WILLOUGHBY DR
- WINDRIDGE RD
- WINOOSKI RD
- WINTERLANE CIR
- WOLFF DR
- WOODLAWN CT
- WOODLAWN DR
- Woods End Dr
- WOODSIDE DR *
- Wrisley Ct
- Wrisley St

as of 12-17-02

APPENDIX C

LIST OF ALL INVENTORIED SITES

Please Note:

It was decided that a printout of the entire inventory data set would be wasteful for the purposes of the Selectboard, due to the 182 pages (doubled-sided) required. If needed, the Planner can provide a complete data set of all street trees, community resource trees, and vacant sites inventoried. Copies are also available in both the Grants Administrator and Community Development Department offices.