

SYCAMORE PARK MANAGEMENT PLAN

BRISTOL, VERMONT



DRAFT FOR REVIEW

Prepared by:

Bristol Conservation Commission

October 2023

Contents

A. Existing Conditions	1
1. General Description of Property	1
2. Recent History	1
3. Ecological Description	2
4. Wildlife Resources	3
5. Historical and Cultural Resources	3
6. Archeological Resources	4
7. Topography and Geology	4
8. Hydrology	5
9. Geomorphology	5
B. Current Uses	6
1. Active Open Space	6
2. Passive Open Space	7
3. Right-of-Way for Adjacent Landowner	7
4. Flood Resiliency Functions	7
C. Current Issues	8
1. Vehicular Access	8
2. Winter Conditions	10
3. Use After Dark and Unsanctioned Activities	10
4. Invasive Plants	10
5. Emerald Ash Borer	11
6. Boundary Issues	11
7. Trash Dumping and Vandalism	11
8. Accessibility	12
9. <<Other Issues>>	Error! Bookmark not defined. 12
D. Management Objectives	12
1. Objectives	12
2. Management Areas	12
E. Management Roles	13
1. Conservation Commission	13
2. Recreation Department	14
3. Selectboard	14
4. Bristol Trail Network	14

5. Other Volunteer Organizations	14
F. Recommended Actions	<u>1514</u>
1. Actions by the Conservation Commission	<u>1514</u>
2. Actions by the Recreation Department	15
3. Actions by the Selectboard	15
G. References	15

LIST OF FIGURES

- Figure 1.** *Sycamore Park (a) location (white star) in the town of Bristol and (b) vicinity map.*
- Figure 2.** *Residential homes and driveways (Palmers Court) occupied Sycamore Park prior to the flood of 1998; houses were removed during a FEMA buyout following the flood.*
- Figure 3.** *Historic positions of the New Haven River in vicinity of Sycamore Park, based on review of aerial photographs on file at the NRCS offices, Middlebury, VT.*
- Figure 4.** *Vehicle tracks along the channel margins at the south end of Sycamore Park, May 2004.*
- Figure 5.** *Padlocked gate installed by the Town of Bristol in May/June 2007 at the parking area near the north end of the park.*
- Figure 6.** *Fill material blocking motor vehicle access to footpath extending to the river channel at the southern end of the Park, June 2007.*
- Figure 7.** *Ash tree inventory in Sycamore Park*

APPENDICES

- Appendix A. Tax Parcel Map**
- Appendix B. Historical Aerial Photographs**
- Appendix C. Newspaper accounts of 1998 flood**
- Appendix D. FEMA Agreement**
- Appendix E. Ecological Evaluation**
- Appendix F. Tree Inventory**
- Appendix G. Bird Inventories**
- Appendix H. Aquatic Insect Inventory**

A. Existing Conditions

1. General Description of Property

Sycamore Park is located in the southwestern portion of the town of Bristol on the west side of Vermont Route 116 just south of the bridge over the New Haven River (Figure 1). The property consists of approximately 8.4 acres and was acquired during the years 1998 through 2000 as part of an agreement between the Town of Bristol and the Federal Emergency Management Agency after a summer flood impacted the area. The park was named in 2004 for the vigorous growth of sycamore trees on the property and is currently managed through the efforts of the Bristol Selectboard, the Bristol Recreation Department and the Bristol Conservation Commission.

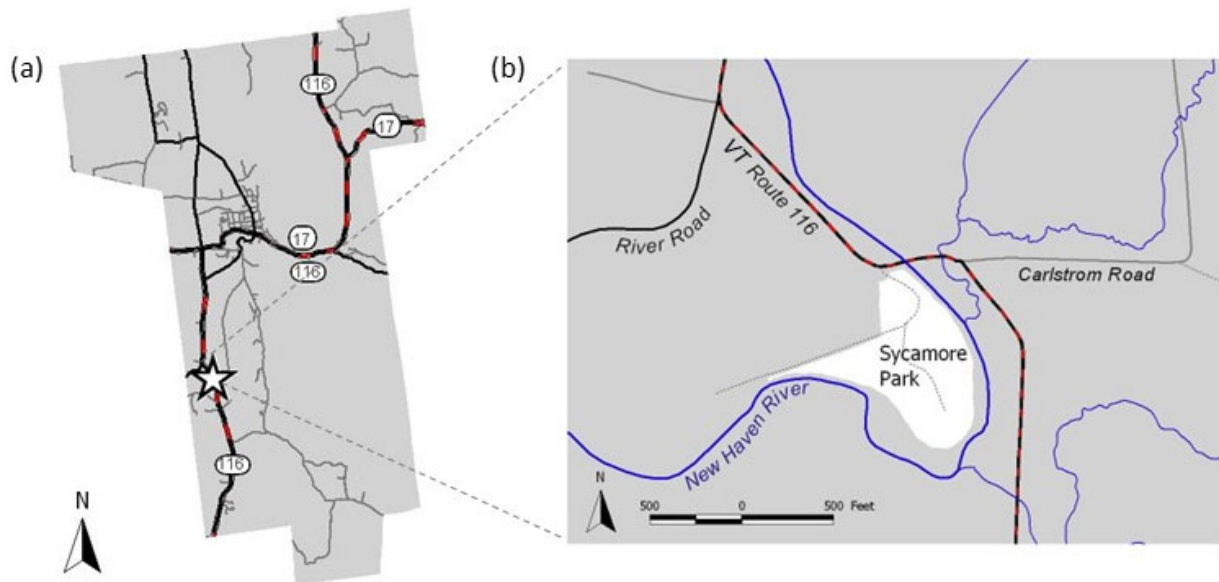


Figure 1. Sycamore Park (a) location (white star) in the town of Bristol and (b) vicinity map.
E911 Address: 2024 South 116 Road, Bristol, VT

The park is an 8.4-acre parcel and does not extend east to the other side of the river, according to town tax maps (see Appendix A). A private parcel that abuts the park to the west is accessed through the park. This landowner holds a key to the park's entrance gate and is permitted to drive through the park.

2. Recent History

Local residents may remember this piece of land as Palmers Court, a cluster of houses and mobile homes that used to be at this site (Appendix B). In a very heavy rainstorm on June 27th and 28th, 1998, the New Haven River watershed received more than seven inches of rain that fell on already saturated soils. Floodwater roared down from Lincoln through Bristol, taking out roads, culverts, and bridges, and slamming into the cluster of houses and mobile homes at Palmers Court. Residents had to be evacuated by fast-water rescue teams, the Bristol Fire Department, and Vermont State Police (Appendix C).

What followed was a period of extraordinary cooperation between the Federal Emergency Management Agency, Vermont Emergency Management Agency, Vermont Department of Housing and Community Affairs, the Town of Bristol, and the people of Palmers Court. A voluntary buy-out program was established to compensate these homeowners for their lost property, and Palmers Court was returned to its former natural state. Under an agreement between FEMA and the Town of Bristol, Sycamore Park will remain forever undeveloped (see Appendix D).

In the ensuing years, Bristol transformed the site into a public recreation area. In 2004, with the aid of the Bristol Recreation Department and Bristol Conservation Commission, the Town created Sycamore Park. The parking area off VT Route 116 just to the north of the Park is on lands owned by the State of Vermont (approx. 2 acres). This area was established during construction of the new Vermont Route 116 bridge crossing over the river in 2017, and the entry area to the park was slightly reconfigured about that time to control vehicular access.

3. Ecological Description

Sycamore Park is located in the floodplain of the New Haven River; accordingly, the ecology of the site is closely tied to the river and its flooding history and frequency. General habitat types include:

- Riverine: the river itself and its various substrate types;
- Riparian: the slopes and vegetation immediately adjacent to the river;
- Floodplain forest: floodplain forest between the riparian area and the meadows on the site; and,
- Maintained meadows: several grassy areas in the interior of the site, primarily where the residences were formerly located.

Most notable is a canopy section of mature floodplain forest south of the entrance following the river, which includes sugar maple, white ash, and basswood, with a diverse herb layer dominated by ostrich fern. The natural community type found along the river is best described as a Sugar Maple - Ostrich Fern Riverine Community, which has been described in a book entitled: Wetland, Woodland Wildland: A Guide to the Natural Communities of Vermont by Elizabeth H. Thompson and Eric R. Sorenson. (See Appendix E for an ecological evaluation of Sycamore Park provided by Mr. Sorenson.)

In general, the forested areas of the park are relatively young, frequently inundated, and responsive to flood episodes. The area tends to be very dynamic, changing as the river channel shifts its position within the broader floodplain. The dominant tree structure particularly in the disturbed areas is composed of mostly box elder and sycamore. The abundance of sycamore is unusual this far north in Vermont. Cottonwood, black willow, hophornbeam, black cherry, yellow birch, white pine, balsam fir, apple, birch and American elm have also been identified within the park (Appendix F). Native herbs identified in the park include wild rye, violet, wild ginger, Dutchman's breeches, toothwort, sensitive fern, tall meadow rue, wild leeks, and Canada lily.

4. Wildlife Resources

The intermix of river with forest, forest edge, and meadow provides habitat for white-tailed deer, woodchucks, muskrats, beaver, and numerous bird species, both terrestrial and aquatic. Bobcats, black bears, and moose have occasionally been sighted within the general area. Several species have been documented for Sycamore Park (Appendix G). Given the diversity of habitat, there is an interesting mix of seasonal transients and winter residents, including such interesting birds as indigo buntings, cedar waxwings, veerys, and sharp-shinned hawks. In addition to what is noted in the lists, Bristol Conservation Commission members have witnessed eagles and nesting wild turkeys in the park, on occasion.

The river itself is a source of diverse species: not only fish, as one would expect, but also numerous aquatic insects and other macroinvertebrates. In a preliminary investigation of aquatic insects, commission member Dave Henderson collected species later identified by Brian Duffy, a biologist who works in the DEC Biomonitoring and Aquatic Studies Section (The BASS Lab). Included were three species of Trichoptera (Caddisflies), one species of Ephemeroptera (Mayflies) and three species in three families of Plecoptera (Stoneflies) (Appendix H). Water quality is generally very good and reflected by the prevalent resident aquatic insects of Mayflies, stoneflies and caddis flies. Significant hatches for anglers include tricorythodes and ephemerella mayflies (Tiny White-winged Blacks and Sulphers) perla stoneflies (Yellow Sallies) and several caddis species.

Regarding fish species, this section of the New Haven River has marginal salmonid habitat above the mouth of Notch (Norton) Brook, which, as a cold tributary, favors trout growth. The next one hundred yards or so to the south is shallow and lacking cover following the 1998 flood. Then the river makes a sharp northerly bend that features bank instability and large woody debris. This better habitat flows into a rip rapped section that allows a deeper run as the river turns southwest and leaves the park.

Population studies by state biologists David Callum and Chet MacKenzie, done in the 1980's, documented low fish numbers below the Rt. 116 bridge. At that time snorkeling revealed excellent size and numbers at the Notch Brook confluence. An experimental "no kill" wild trout regulation was in effect at that time and was subsequently discontinued due to the poor overall habitat in the section from the Route 116 bridge to the Nash Farm bridge to the south.

5. Historical and Cultural Resources

Prior to the 1998 flood, these lands were the site of Palmer's Court mobile home park. These homes were developed on this point of land between 1963 and 1974 (Attachment B). By the mid-1990s, ten homes were located here (Figure 2). These structures were damaged in the June 1998 flood, and subsequently removed from the property as part of a FEMA buyout.



Figure 2. Residential homes and driveways (Palmer's Court) occupied Sycamore Park prior to the flood of 1998; houses were removed during a FEMA buyout following the flood.

6. Archeological Resources

To date no official archeological evaluations are known to have been completed on the property. However, given the ideal juxtaposition of river and low-lying woodlands, it is likely that Native Americans actively used the area, especially as a temporary residence and hunting/fishing ground. According to the The Early History of Bristol Vermont, formerly known as Pocock by The Hon. Harvey Munsill Esq., the original settlers in Bristol occupied land along the New Haven River east of New Haven East Mills.

7. Topography and Geology

With the exception of a slope up to higher elevations just off the Sycamore Park property in the northwest corner, the parcel is fairly uniform in elevation. According to the United States Geological Survey South Mountain (VT) quadrangle, the elevation of the upland areas is 320' and 340' above sea level, with the New Haven River some 3' to 6' lower. Floodwaters have carved depressions in the land surface at a few places in the park's interior.

The soils on the site are almost exclusively Hadley floodplain, a very fine sandy loam, frequently flooded, with slopes from 0 to 3 percent. Minor components include Ondawa, Podunk and Winooski, all flood plain soils.

8. Hydrology

The New Haven River is a “flashy” river, rising quickly in response to rain and snowmelt events. Several large floods (1927, 1936, 1938, 1976, and 1998) have impacted the watershed, with the 1927 flood being the one of largest magnitude on record. Most recently, the floods of 1976 and 1998 have resulted in damages to Sycamore Park. Stone rip-rap was installed along the river banks after the 1976 flood in an attempt to protect homes in Palmers Court and croplands south of the park. In June of 1998 floodwaters coursed through the park, washing out driveways and septic systems and undermining homes. These homes were subsequently removed from Palmers Court during the FEMA buyout occurring between 1998 and 2000 (Figure 3). Several trenches, or flood chutes, eroded during the 1998 flood are still visible in the meadows at the Park. Nearby Route 116 and the cornfield to the immediate south of the Park were also inundated by flood waters. The magnitude of the 1998 flood has been estimated as a 500-year event. More recently, high water in August 2011 and October-November 2019, has inundated the parking lot and occupied flood chutes in the park.

The upstream drainage area of the New Haven River at the Sycamore Park location is 88 square miles, or 76% of the total New Haven River watershed which drains to the Otter Creek. At the southeastern edge of Sycamore Park, the New Haven River receives a tributary (Little Notch), which drains a 10.8-square-mile area in size extending along the Upper Notch Road in Bristol to the southwestern corner of Lincoln.

9. Geomorphology

Sycamore Park is located along a dynamic reach of the New Haven River, on the inside of a growing meander bend. Except for the elevated terrain at the northwestern extent of the property, Sycamore Park is located entirely within the 100-year floodplain mapped by FEMA (Flood Insurance Rate Map, Town of Bristol, 1986). Thus, the Park is highly susceptible to impacts during flood events – both from rising water (inundation) and from sudden erosion.

Figure 3 shows the historical channel positions of New Haven River. The river has cut into the cornfield to the south and west, eroding more than 2 acres of cropland between 1998 and 2003. Even prior to the 1998 flood, this was a very actively-adjusting section of channel, based on historic positions of the channel in 1942 and 1963.



Figure 3. Historic positions of the New Haven River in vicinity of Sycamore Park, based on review of aerial photographs on file at the NRCS offices, Middlebury, VT. Base image is from 2003, taken just after structures had been removed from the park during the FEMA buyout.

B. Current Uses

Current uses are divided according either to the level of activity - Active and Passive Open Space - or to the type of use - Hydrologic and Geomorphic Functions, and Right-of-Way for Adjacent Landowner.

1. Active Open Space

Active open space may be defined as land surfaces utilized for specialized recreational activities, often with equipment in place (e.g., ballfields, sports areas, picnicking). While there are no developed ballfields or sports areas, there are open spaces that are actively used by the Bristol Recreation Department for summer camp activities. Some of this area is located directly adjacent to the river: primarily the area of beach along the southern property line. A small picnic area is also present along the river bank at the north corner of the park, a short walk from the parking area.

2. Passive Open Space

Passive open space describes an area where the natural condition of the land provides the setting for human activities. Relevant activities at Sycamore Park include bird-watching, hiking, fishing, and wading. Within the Sycamore Park, areas of passive open space include the New Haven River itself where people can fish and wade in the water. This section of the New Haven River will continue to be an easy access site for wading anglers. It would also include the floodplain forest along the southern boundary. It is a potential site for a wheelchair access as well.

Sycamore Park is a day-use site open from dawn to dusk. No public access is allowed between dusk and dawn. Motorized vehicles are not permitted at the park. Trespassers between dusk and dawn will be handled according to the Town's Trespass Ordinance.

3. Right-of-Way for Adjacent Landowner

Private property located along the immediate west boundary of Sycamore Park is accessed via the park road and has no other reasonable means of entry / egress. Park roads and the entrance gate are presently utilized by the adjacent landowner.

4. Flood Resiliency Functions

The floodplain environment of Sycamore Park serves an important flow and sediment attenuation role in the New Haven River watershed. The excess energy of flood waters is dissipated where permitted to overflow onto the floodplain surrounding the river channel. This reduces the volume and velocity of flood waters along the river in downstream reaches. Sediments also are deposited in the floodplain instead of being transported downstream where they may contribute to debris jams, and bridge or culvert washouts. Flow and sediment attenuation functions of the floodplain can be enhanced where "roughness" is offered by well-established buffer vegetation (particularly trees). These hydrologic and geomorphic functions of the floodplain are also intimately tied to ecological functions. Many plant and animal species in the Sugar Maple -Ostrich Fern Riverine Community rely on or thrive best in an environment of periodic overbank flooding.

The hydrologic and geomorphic functions of the Sycamore Park are compatible with the current uses of the park (active and passive open space for recreational and educational purposes). The FEMA buyout agreement governing management of the lands comprising Sycamore Park stipulates that "the property shall be dedicated and maintained in perpetuity for uses compatible with open space, recreational, or wetlands management practices; and no new structure(s) will be built on the property" [44 CFR Sect 206.434 as referenced in the Agreements between individual landowners and the Town of Bristol].

To preserve the flow and sediment attenuation functions of the floodplain within the park, and to minimize future erosion losses and risks to public health, it would be important not to fill, grade, berm or place structures within the historic flood chutes and active floodplain. Preservation of flood chutes from the 1998 flood will also provide educational opportunities - serving as a

physical reminder of the erosional power flood waters. Appropriate measures should be taken to protect the safety of park visitors, as some of these residual flood chutes have left significant depressions in the landscape.

C. Current Issues

Along with all the beneficial uses described above, public land may be subject to occasional conflicts of use, inappropriate use or other conditions that pose concerns. Current issues related to use of Sycamore Park include:

1. Vehicular Access

Following transfer of Sycamore Park lands to the Town of Bristol after the 1998 flood, an ordinance was enacted effective October 9, 1999 that specified “Dawn to Dusk” use of the park and restricted all motor vehicles to the designated parking area only. “Motor Vehicle” is defined in the ordinance as “any motorized vehicle including automobiles, trucks, motorcycles of any type, all terrain vehicles [ATVs], mopeds and snow mobiles.” As a result, vehicle access within the Park is now limited to select (authorized) recreational functions, park maintenance, and the adjacent landowner to the west.

Vehicular access to the park is restricted for several reasons. Historically, ATVs and vehicles were directly accessing the river channel and beach areas (Figure 4), and this activity has the potential to impact surface and groundwater quality (from oils, greases, and other automotive fluid leaks). Vehicles in the park would be at risk along this river that is prone to flash flooding. And finally, passage of the vehicles over beach areas contributes to overall instability of the channel and increases streambed and bank erosion. Compaction of beach sediments under the weight of passing vehicles creates preferential pathways for flood waters and can contribute to channel avulsions and enhance rates of lateral channel adjustments.



Figure 4. Vehicle tracks along the channel margins at the south end of Sycamore Park, May 2004.

In May and June of 2007, several improvements were made in the Park by a collaboration of professionals, town personnel, and the Bristol Recreation Department with funding through the Edith Stock Trust. These improvements were designed to enhance conditions in the park for bird habitats and had the secondary benefit of further protecting the hydrologic and geomorphic functions of the park. A pad-locked gate was installed near the northern end of the park (Figure 5). An existing wooden-pole barrier in the vicinity of the gate was supplemented by a large-rock barrier to restrict motor vehicle access to the parking area near the Park entrance off Route 116. Footpaths previously accessed by motor vehicles to drive onto the sediment bars of the river channel were further blocked by shallow trench excavation and fill (Figure 6). These measures appear to have substantially reduced the occurrence of motor vehicles in the park interior; however, limited motorcycle use is occasionally evident, and ATVs can cross into the park from adjacent lands.



Figure 5.

Padlocked gate installed by the Town of Bristol in May/June 2007 at the parking area near the north end of the park.



Figure 6.

Fill material blocking motor vehicle access to footpath extending to the river channel at the southern end of the Park, June 2007. Evidence of motorcycle (dirt bike) use over the berm.

2. Winter Conditions

Sycamore Park is open for day use throughout the year. However, the Bristol Public Works Department may not consistently plow or maintain the parking lot during winter months, depending upon maintenance needs for Bristol's primary road network which takes priority.

3. Use After Dark and Unsanctioned Activities

Occasional evidence of unapproved overnight use at the park is identified during weekly inspections by the Bristol Recreation Department – typically in the summer months. Overnight use of the park is only allowed with prior approval of the Bristol Selectboard. For example, the Boy Scouts have camped overnight as part of their training. The gate has been very effective in eliminating this type of activity. Diligence in maintaining the gate will help alleviate the potential for unsanctioned activities.

4. Invasive Plants

Due to its land use history and a ready seed source from the river, the Park has numerous invasive plant species, which have moved in aggressively. Most evident are Japanese knotweed and shrub honeysuckle; lesser amounts of dame's rocket, wild garlic and moneywort are also present. Large stands of Japanese Knotweed are established in the gravel beds of the river, along the stream banks, within the riparian forest, and wherever regular mowing is not carried out. Non-native honeysuckle forms almost impenetrable clusters along the northern boundary. A complete inventory of invasive plants has not been conducted at the park.

In general, invasive species are opportunistic species, often brought in as horticultural prizes from foreign countries, which get a foothold in an area, then out-compete the native species. Invasive species succeed because they are out of their natural element: they have no natural predators, no environmental controls. They live out of harmony with the species of plants and animals that have taken millennia to adapt to their growing conditions and habitat structure. As a result, invasive plants frequently form monocultures of their species, and the native plants die back. This alters the ecosystem, taking away the plants which have provided food and structure for numerous animal species, including pollinators and other insects. The overall habitat value is greatly reduced.

Control of invasives is an on-going battle, and often a very difficult one. The Conservation Commission has experimented with mechanical efforts to control Japanese Knotweed at Sycamore Park (e.g., repeated cutting). However, this management approach is labor intensive, requiring several cuttings per year over several years to reduce the knotweed, and the invasive easily returns through rhizome extension and seed dispersal. Strategic use of herbicides can be effective but requires very knowledgeable and careful application by a licensed contractor and has associated water quality and environmental concerns. Based on currently available treatment methods, complete eradication of knotweed at the park will be nearly impossible and is not feasible within current town resources. Instead, the Bristol Conservation Commission is focused on identifying and eradicating new clumps of knotweed (digging and cutting) to prevent further spread of this invasive.

5. Emerald Ash Borer

At least 14 native ash trees have been identified in Sycamore Park or closely adjacent areas and are being closely monitored for signs of Emerald Ash Borer infestation by Bristol Recreation Department staff (Figure 7). The Emerald Ash Borer (EAB) Beetle (*Agrilius planipennis*) is an invasive species that has been confirmed in Bristol by the Vermont Department of Forests, Parks and Recreation in June 2019. This beetle represents a serious threat to all native Ash trees in Sycamore Park and the surrounding properties. In 2020, The Bristol Conservation Commission, the Town of Bristol and local volunteers created an EAB strategic management plan that addresses how to best move forward to address this issue. The Bristol Recreation Department and Bristol Conservation Commission will continue to monitor the most recent state guidance and best practices for ash tree management.

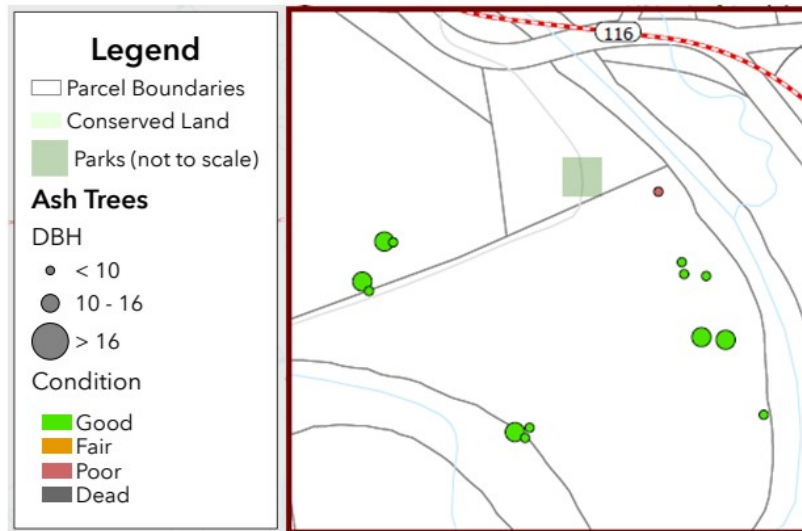


Figure 7. Ash tree inventory in Sycamore Park, excerpted inset figure from “Map 1: Emerald Ash Borer Inventory: Bristol, Vermont (2021)” created by Addison County Regional Planning Commission. DBH = Diameter at Breast Height (inches).

6. Boundary Issues

A privately-owned parcel abuts Sycamore Park to the west and is accessed through the gated entrance along a gravel drive that follows the northern park boundary. This landowner has a key to the gate lock. The Bristol Conservation Commission has been in contact with this landowner on occasion, and no known issues have been identified.

7. Trash Dumping and Vandalism

Litter has been an issue at Sycamore Park, typically concentrated near the parking lot and picnic area, but also along the river-bank beaches. Green Up activities in the spring of each year coordinated by the Conservation Commission have organized citizens to remove trash from the park. The Bristol Recreation Department has added a “Pack it in; pack it out” sign at the park entrance. Weekly inspections by the Recreation Department will continue to monitor whether this issue persists.

In the past, vandalism to the park kiosk has occurred, and repairs were made using Bristol Conservation Commission operating funds and material donations. Restricting vehicular access

and instituting weekly inspections at the park are measures that appear to have reduced the incidence of vandalism.

8. Accessibility

At present, access to Sycamore Park by those who are differently abled is somewhat challenging. Footpaths are not necessarily ADA-compliant (Americans with Disabilities Act) and wheelchair passage is limited. However, there is strong potential to improve accessibility. Sycamore Park is mostly level in elevation and has a path system built on past gravel driveways that may provide adequate base material and grades to establish ADA-accessible trail segments. The Bristol Trail Network (i.e., Bristol Rec Club) has secured a grant to evaluate the potential to improve accessibility at the park and identify potential sources of grant funding. Enhanced accessibility at the park should be considered within the constraints of any deed restrictions on new development that were associated with the buyout of this property following the 1998 flood. Goals for enhanced accessibility should be balanced against conservation goals for the park's sensitive resources, and recognize the high likelihood of future flooding at the park.

Management Objectives

1. Objectives

Sycamore Park is a town-owned open space that has potential for a combination of uses and conditions, including a small area of active recreation and passive open space. The property offers unique opportunities not only for recreational use associated with access to the New Haven River, but also for educational activities by school groups and residents.

Management objectives and related management practices must be carefully balanced with the resource concerns and scenic nature of the river itself. Accordingly, listed below are overarching objectives that address both uses and conservation:

- Access to the park by anglers, hikers, and bird-watchers is integral to the recreational function of the open space and should be enhanced as best practices allow.
- The use of the park for educational purposes should be pursued and enhanced whenever possible.
- Enhancements to accessibility at the park should be pursued whenever possible.
- Public access to the park should be weighed against the protection of sensitive resources.

2. Management Areas

To accomplish these objectives, possible activities by management area include the following:

- Active open space: including the small picnic area, gravel parking lot, pollinator garden, and river-side beaches.
 - Birding
 - Photography
 - Gardening
 - Fishing

- Wading/Swimming
 - Kayaking
 - Picnicking
 - Fitness Classes
 - Management of invasive plants
 - Geo-caching
- Riparian zone: a zone approximately 50 feet landward from the outermost edge of the river channel.
 - Fishing
 - Fish & invertebrate identification
 - Plant & tree identification
 - Mammal identification
 - No clearing of vegetation is permitted except for dead or damaged trees that may pose a safety hazard.
- Passive open space: areas not included in the other two.
 - Hiking / Fitness
 - Birding
 - Photography
 - Apple picking
 - Plant & tree identification
 - Mammal identification
 - Geo-caching
 - Management of invasive plants

Sycamore Park is a day-use site open from dawn to dusk. No public access is allowed between dusk and dawn, except for specific activities granted prior approval by the Selectboard. Motorized vehicles are not permitted at the park. Visitors may enjoy swimming or wading in the river, however no life guard is available. Trespassers between dusk and dawn will be handled according to the Town's Trespass Ordinance.

D. Management Roles

Management of Sycamore Park will be achieved through cooperative actions of several groups.

1. Conservation Commission

The Bristol Conservation Commission is a town board with a mission to conserve Bristol's natural and cultural heritage for present and future generations, raise public awareness for these resources and provide opportunities for greater involvement by the community (<http://bristolvt.org/boards-commissions-committees/conservation/>). The Commission has developed this management plan for Sycamore Park in keeping with implementation actions

outlined in the Bristol Town Plan (2020). Along with the Selectboard and Recreation Department, the Commission is charged with maintaining existing public facilities and outdoor spaces that encourage social and leisure time activities among town residents. The Commission works closely with the Recreation Department on maintenance of Sycamore Park. Funds available to the Bristol Conservation Commission to implement management activities include the BCC annual operating fund, and residuals of the Edith Stock Trust Fund to “benefit the birds of Bristol.”

2. Recreation Department

Bristol Recreation Department (www.bristolvt.myrec.com) is committed to offering lifelong learning opportunities through a wide range of quality recreational and performing arts activities to people of all ages. The Recreation Department has contributed to this management plan for Sycamore Park and oversees weekly maintenance activities at the park.

3. Selectboard

The Bristol Selectboard is ultimately responsible for recreation and healthy living in the town of Bristol, with support from the Conservation Commission and Recreation Department. The Selectboard reviews and approved this management plan for Sycamore Park and works with the Conservation Commission and Recreation Department to secure the necessary resources to maintain and improve the town parks.

4. Bristol Trail Network

The Bristol Trail Network operates under the auspices of the Bristol Recreation Club, Inc., a non-profit (501(c)3), volunteer-run, membership organization, open to all in the community. The mission of the Bristol Recreation Club is to maintain outdoor recreation space for the amusement, enjoyment, and recreation of the residents of Bristol (www.bristolreclub.org/). The Bristol Trail Network is a project of the Bristol Recreation Club launched in 2017 (www.bristolreclub.org/bristol-trail-network). In addition to the main focus of building a loop of interconnected trails around the Bristol village, BTN volunteers are also improving and expanding trails on other town-owned properties.

5. Other Volunteer Organizations

Other volunteer organizations that may contribute to future maintenance and improvements at the park include the Boy Scouts and Girl Scouts, as well as students from Mount Abraham Union High School. The New Haven River Anglers Association, is a regional group dedicated to the protection and enhancement of the New Haven River, that flows alongside the park. Addison County River Watch Collaborative has traditionally posted water quality monitoring results in the kiosk at Sycamore Park to communicate results for monitoring stations located upstream and downstream on the New Haven River.

E. Recommended Actions

1. Actions by the Conservation Commission

- Continue active involvement as overseers of the protection and enhancement of the natural resources at the park.
- Continue to coordinate Green-Up Day clean-ups at the park, including tending to the pollinator garden.
- Maintain contents of the kiosk at the park.
- Encourage public participation in on-site invasive management activities.
- Coordinate with experts, watershed groups, and/or academic groups to conduct inventories of invasive species as well as bird, plant, mammalian, fish and invertebrate species at the park.
- Develop management plans for control and eradication of invasive plant species.
- Continue to work cooperatively with Bristol Selectboard, Recreation Department and others for the protection and enhancement of the park.

2. Actions by the Recreation Department

- Continue active maintenance activities at the park including weekly inspections.
- Increase signage and other online notifications that clarify the day-use nature of operations from dawn to dusk.

3. Actions by the Selectboard

- Work with the Conservation Commission on items involving the protection and enhancement of natural resources at the park.
- Through activities of the Emerald Ash Borer town committee, inventory the ash trees at the parcel and develop a management plan for these ash trees.
- Closely monitor any actions by the Recreation Department concerning unsanctioned or overnight activities at the park.
- Closely monitor any actions by the Police Department relating to illegal activities at the park.
- Provide oversight of the activities of all municipal boards and public groups at the park.

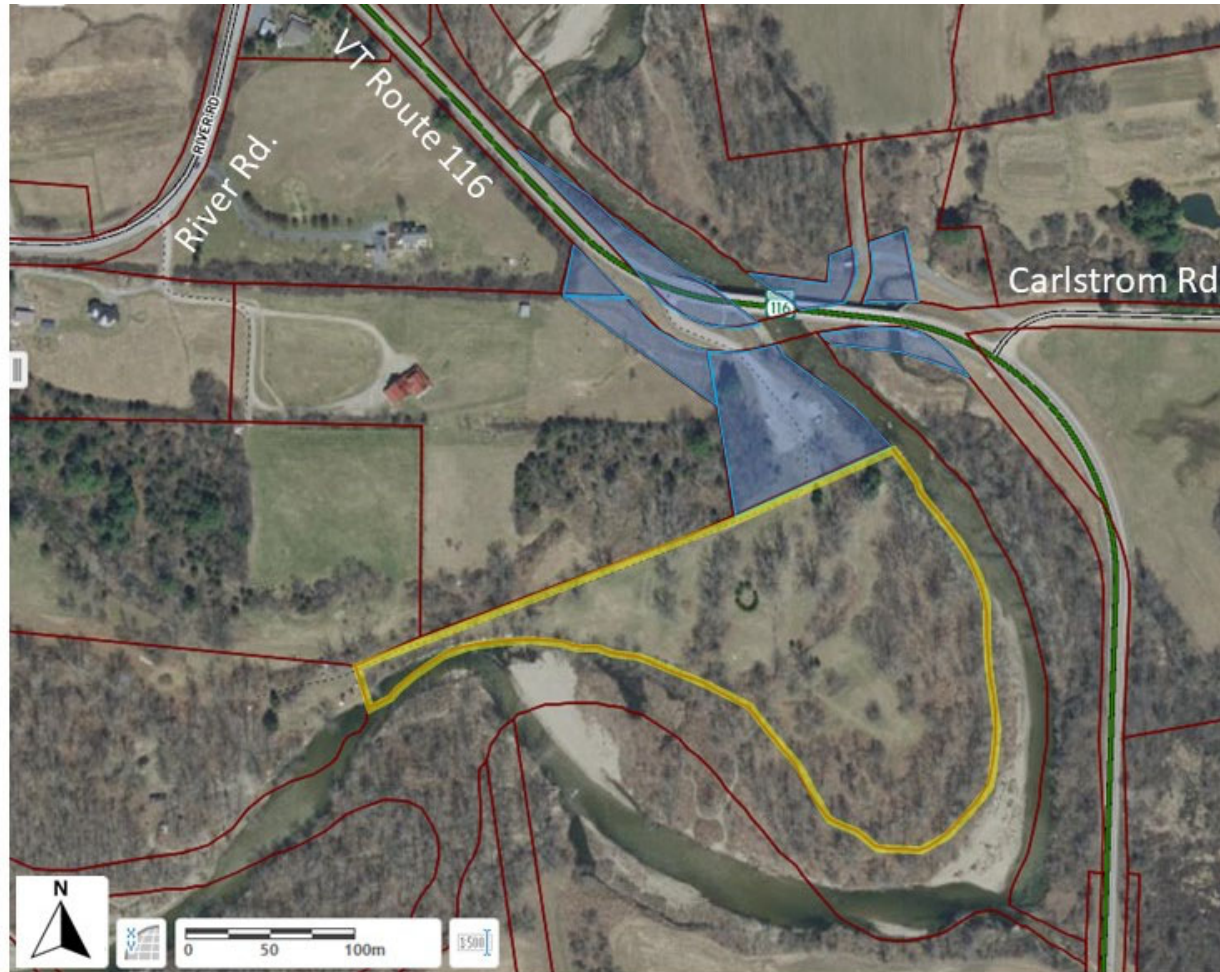
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APPENDICES

Appendix A. Tax Parcel Map



LEGEND

-  Parcel Boundaries
-  Sycamore Park, owned by Town of Bristol
-  Parcels owned by VT Agency of Transportation

Base image (VT Ortho 2018) and parcel boundaries (c.2018) obtained from VT Natural Resource Atlas (<https://anr.vermont.gov/maps/nr-atlas>). Parcel boundaries are for planning purposes only, and do not represent actual surveyed boundaries.

Appendix B. Historical Aerial Photographs

Figure B1. Sycamore Park vicinity in 1960.



Figure B2. Sycamore Park vicinity in 1973.



Figure B3. Sycamore Park vicinity in 2018.



Appendix C. Newspaper accounts of 1998 Flood

The Burlington Free Press
28 Jun 1998, Sun · Page 4

“Bristol residents hold on till help arrives”

By Helen J. Simon
Free Press Staff Writer

BRISTOL — For eight harrowing hours, five adults and three children trapped in a home in Palmer’s Court watched floodwaters swirl around them and rise steadily as rescuers — just yards away — stood by helplessly.

The New Haven River ripped up trees, pushed trailers askew on their foundations, filled cars and washed out lawns and gardens.

“We were just basically looking out the window and watching everything float by — we couldn’t believe it,” said Richard Fagga, one of those trapped at the community near Vermont 116 and River Road. Water was 6 feet deep in his basement.

“We didn’t really think we were going to drown,” he said. “We were just nervous that it would come up higher and get into the living area of the house.”

Emma Michaud said she could look across the floodwaters and see her companion, Bob Fagga, standing on the other side: “I was wondering if we were going to get out.”

Everyone remained calm, though. Jennet Tallen, another resident, said her children saw it as an adventure. “They were pretty excited,” she said. But they settled down, she said, spending much of the time snoozing on the couch.



ALDEN PELLET, The Associated Press

Rescue workers move Frank Meachum to a stretcher and into a waiting ambulance after he was rescued Saturday by boat from his trailer home at Palmer’s Court in **Bristol**.

11 inches of rain make floods inevitable

By Emily Stone
Free Press Staff Writer

Saturday's flash flooding came after central Vermont received more rain in the past two days than it usually gets during the entire month of June. Add to that the fact the area had already been deluged with other storms during the past few weeks.

From Friday morning to Saturday morning, 3.65 inches of rain fell in South Lincoln, bringing the total in June to more than 11 inches. The normal June rainfall there is about 3.5 inches, according to Basil Newmerzhycky, a meteorologist with the National Weather Service in South Burlington.

The area flooded because the soil could not absorb the water fast enough. After having been hit with rain for 12 of the last 14 days, the ground was saturated.

"It's like a sponge," said University of Vermont geology Professor Rolfe Stanley. "There's too much (rain) coming down at once."

The recent series of storms were born from a weather front that stalled where the borders of Vermont, New York, Canada meet. The front, which is a dividing line between warm, wet air to the south and cool, dry air to the north, kept getting hit by a string of low-pressure systems that were passing through. Low pressure causes the warm and cool air to mix, creating thunderstorms.

These storms traveled southwest out of the front and over Vermont, drenching everything in their wake, Newmerzhycky said.

The excess groundwater makes its way to the nearest gully, stream or river, Stanley said, which can overload the waterways. The flood begins to recede as the soil and plants absorb the moisture and as the rivers deposit their surplus water downstream into other rivers or Lake Champlain.

The lake's level was 97.52 feet Saturday afternoon, but it isn't likely to reach its flood level of 101.3 feet, said Robert Pump, petty officer with the U.S. Coast Guard in Burlington. "We've got plenty of room," he said.

Newmerzhycky said it will take a week of dry weather for the floodwater to recede. With more thunderstorms forecast as early as Monday, it might take longer.

The weekend's floods are the latest in a series of summer floods that have hit the state in the past few years. Last year northern Vermont suffered the most damage in flash floods. In 1996, Grafton, in southern Vermont, was hit. In 1995, Lamoille, Caledonia and Washington counties were awash in more than 10 inches of rain that fell in August.

"This is never-ending," said Gov. Howard Dean, speaking from Virginia. He will tour the disaster sites today.

The Associated Press contributed to this

Damage 'unbelievable'

Dean tours flood sites; expects aid

By Abbey Duke
Free Press Staff Writer

WARREN — As residents in nine towns tallied water and mud damage from weekend flooding, meteorologists predicted more bad news: thunderstorms, torrential rains and hail.

Gov. Howard Dean on Sunday toured flooded homes and washed-out roads in Bristol and Warren.

He was awed by the damage. "It's unbelievable," Dean said. "The personal losses in these homes is just terrible."

The National Weather Service said rain will drift across Vermont this morning and develop into a strong storm with heavy winds and hail by tonight.

Damage from Saturday's flash floods extended in a west to east band from Bristol in Addison County to Bradford in Orange County.

Despite several dramatic rescues on land and water, no one was hurt.

Dean declared a state of emergency on Saturday in nine communities covering a four-county area.

"It's a very serious flood," Dean said after viewing Bristol's damage Sunday afternoon. "If this is anything like what I expect we'll see in Waitsfield, Warren and Bradford, we'll have no trouble getting a federal declaration."

Damage estimates were unclear Sunday night even as 30 federal and state workers fanned out across the affected area.

In the hardest-hit communities, pockets of destruction included:

■ Sections of five major roads that are still closed in Warren, Lincoln, Bristol and Bradford.

See DAMAGE, 4A

INSIDE

- Debris from flood clogs Lake Champlain, 4A
- Roads closed, 4A
- More rain, 4A
- Upstate New York recovers from storm, 4A
- Flooding hits Ohio and West Virginia, 8A



JASON REDMOND, for the Free Press
Jason Conley of Bristol (left), Cnery Freeguard of Whiting and Travis Manning of Bristol clean up the aftermath on Sunday of the floods that hit Palmer's Court mobile home park in Bristol.

Flood victims pick up the pieces

By Adam Lisberg
Free Press Staff Writer

BRISTOL — Standing on his mud-soaked front steps Sunday, Rich Gagnon ran a hand through his hair and numbly recited his losses: clothes, furniture, a swimming pool, a big-screen TV, a freezer full of meat.

All this was taken away a day before, when the raging New Haven River swept through the Palmer's Court mobile home park. Sunday, Gagnon's children loaded what remained into boxes, and his friends loaded the boxes onto a truck.

"We have no money. We have no relatives around here," he said. "I'm not staying. I'm just going to take what I have, and that's it. I'm going."

A day after devastating flash floods swept across central Vermont, people like Gagnon spent Sunday amid the wreckage of their homes and possessions, salvaging what they could, still shaken by their memories of wa-

ter rising in the darkness. "There's no sense in crying," said Debbie Cram of East Middlebury, who was visiting her son's girlfriend in the Bristol mobile home park. "You just have to keep going."

From Bristol to Warren, from Lincoln to Waitsfield, people be

See VICTIMS, 5A



JASON REDMOND, for the Free Press
Waitsfield and Champlain Valley Telecom workers set up a line to pull a telephone line out of the New Haven River on Sunday.



JASON REDMOND, for the Free Press
Gov. Howard Dean talks to Marshall Gary and Joann Francis at their home in Palmer's Court mobile home park in Bristol. The governor was surveying flood-damaged areas of Vermont on Sunday.

Bristol to buy damaged properties **Flood** victims cheer news of FEMA buyout

By Bill Paine

Free Press Correspondent

BRISTOL — **Bristol** voters have approved the purchase of 14 properties damaged during **floods** in June.

The town expects to receive \$537,700 from the Federal Emergency Management Authority within 30 days to pay for 11 properties comprising 13.18 acres and demolition of the damaged structures.

"It's good for all the families down here," said Julie Manning, whose Palmer's Court mobile home is one of the properties being bought by the town. "We don't have a lot left, and we don't have a lot of money to rebuild."

Combined federal and state grants totalling \$160,900 are being sought for the additional three properties that were damaged but were not included in the FEMA buyout. The parcels would become town property under terms of the grants.

The 11 properties are within the Palmer's Court mobile home park off Vermont 116. The park took the brunt of the **flood** damage June 27.

The **Bristol** Selectboard has discussed the possibility of creating a public park and picnic area in the former trailer park once the land is reclaimed.

Ten purchase and sales agreements were signed following the meeting, the others are expected shortly. Property owners agreed to the buyout using the valuation already set by the town for property tax purposes.

Town Administrator Bob Hall said there will be no expense for the residents of the town.

"When the federal dollars are in the town's bank account, then we will have closing on the properties," he said.

Manning, her husband, Scott and their two children have lived in the mobile home since the **flood** waters receded. Their family room was de-

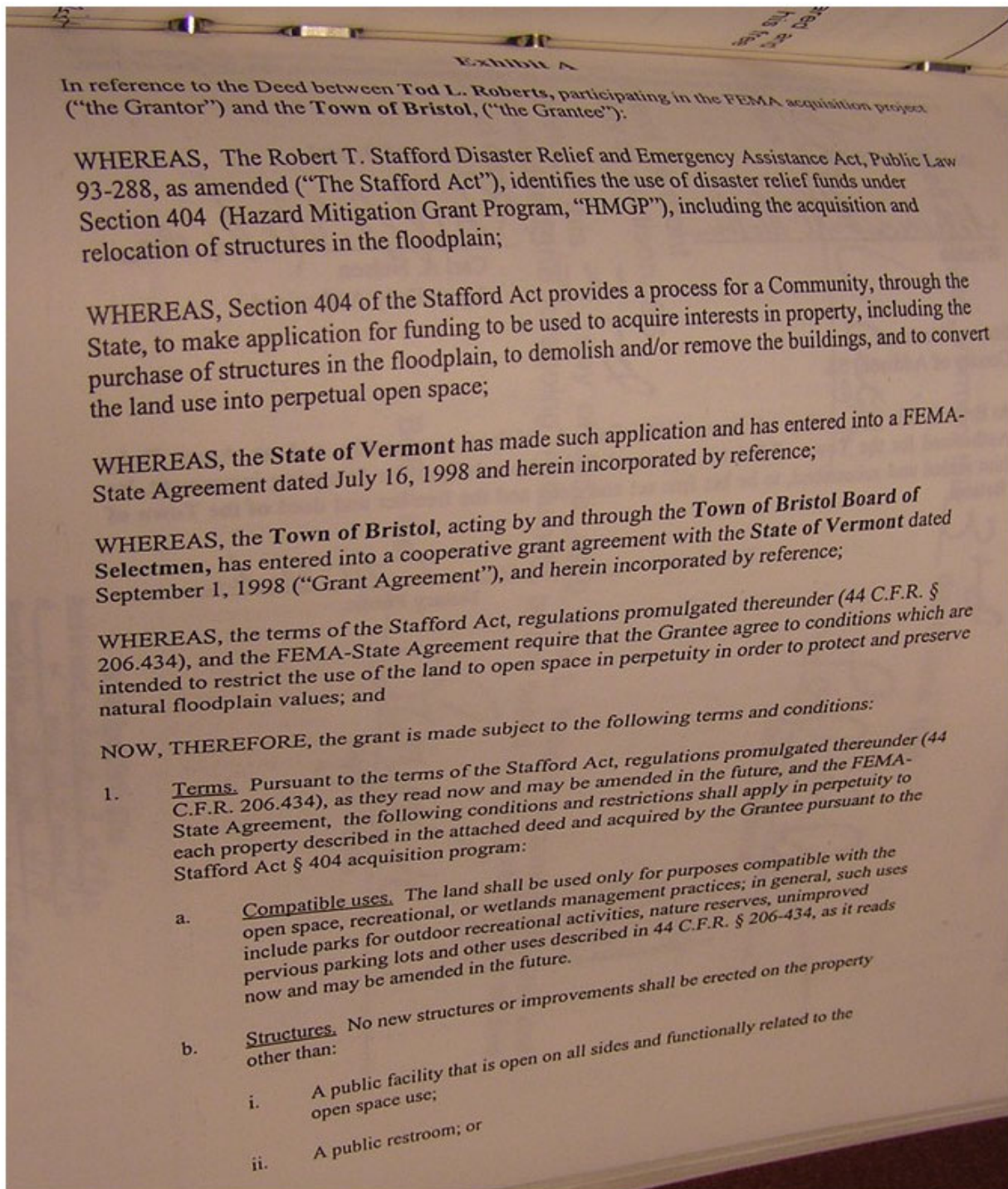
stroyed, and water was cut off to their home. For more than two months, they've had to haul water from outside for dishes, flushing toilets and bathing, but hope is just a few signatures away.

The couple will sign the needed paperwork with the town soon, and will find a new place to live.

"It's been very stressful," said Manning, of the ordeal she and her family went through this summer."

Appendix D. FEMA Agreement

Town of Bristol Land Records, Volume 91, Pages 416-418



iii. A structure that is compatible with the uses described in Paragraph 1(a), above, and approved by the Director in writing prior to the commencement of the construction of the structure.

Any structures built on the property according to this paragraph shall be floodproofed or elevated to the Base Flood Elevation plus one foot of freeboard.

- c. Disaster Assistance. No future disaster assistance from any Federal source for any purpose related to the property may be sought, nor will such assistance be provided;
- d. Transfer. The Grantee agrees that it shall convey any interest in the property only with prior approval of the transferee from the Regional Director of FEMA and only to another public entity or to an organization qualified under Section 170(h) of the Internal Revenue Code of 1954, as amended, and applicable regulations promulgated thereunder. However, the Grantee may convey a lease to a private individual or entity for purposes compatible with the uses described in Paragraph 1(a), above, including agriculture, with the prior approval of the Regional Director.

If title to the property is transferred to a public entity other than a qualified state or federal agency with a conservation mission, it must be conveyed subject to a Conservation Easement that shall be recorded with the deed and shall incorporate all terms and conditions to enforce the easement. This shall be accomplished by one of the following means:

- i. The Grantee shall convey, in accordance with section (d), above, a conservation easement to someone other than the title holder, or
- ii. At the time of title transfer, the Grantee shall retain such conservation easement, and record it with the deed.

2. Inspection. FEMA, its representatives, and assigns, including [State], shall have the right to enter upon the property, at reasonable times and with reasonable notice, for the purpose of inspecting the property to ensure compliance with the terms of the grant.

3. Monitoring and Reporting. Every two (2) years on [date], the Grantee, through [State], shall submit to the FEMA Regional Director a report certifying that the Grantee has inspected the subject property within the month preceding the report, and that the property continues to be maintained consistent with the provisions of the grant.

4. Enforcement. If the subject property is not maintained according to the terms of the grant, the Grantee, [State], and FEMA, its representatives, and assigns are responsible for taking measures to bring the property back into compliance.

- a. The State will notify the Grantee in writing and advise the Grantee that it has 60 days to correct the violation.
- b. If the Grantee fails to demonstrate a good faith effort to come into compliance

with the terms of the grant within the 60-day period, the State shall enforce the terms of the grant by taking any measures it deems appropriate, including but not limited to bringing an action at law or in equity in a court of competent jurisdiction.

- c. FEMA, its representatives and assigns may enforce the terms of the grant by taking any measures it deems appropriate, including but not limited to the following:
 - d. Requiring transfer of title in accordance with Paragraph 1(d). The Grantee shall bear the costs of bringing the property back into compliance with the terms of the grant; or
 - e. Bringing an action at law or in equity in a court of competent jurisdiction against the State or the Grantee.
5. Severability. Should any provision of this grant or the application thereof to any person or circumstance be found to be invalid or unenforceable, the rest and remainder of the provisions of this grant and their application shall not be affected and shall remain valid and enforceable.

IN WITNESS WHEREOF, I hereunto set my hand this 3rd day of June, 1999.

IN PRESENCE OF

George Buie
Witness

Tod L. Roberts
Tod L. Roberts

State of Vermont
County of Addison, SS

At Bristol, this 3rd day of June, 1999, Tod L. Roberts personally appeared and acknowledged the foregoing instrument, by him sealed and subscribed, to be his free act and deed.

Before me:

George Buie
Notary Public

Appendix E. Ecological Evaluation

Sycamore Park, Route 116, Bristol

Species list from May 14, 2004 site visit, Eric Sorenson

Species marked by an * are non-native and invasive.

Natural Community: Sugar Maple-Ostrich Fern Riverine Floodplain Forest

Trees

sycamore (*Platanus occidentalis*)

cottonwood (*Populus deltoides*)

boxelder (*Acer negundo*)

black willow (*Salix nigra*)

sugar maple (*Acer saccharum*)

hophornbeam (*Ostrya virginiana*)

black cherry (*Prunus serotina*)

white ash (*Fraxinus americana*)

American elm (*Ulmus americana*)

basswood (*Tilia americana*)

Shrubs

silky dogwood (*Cornus amomum*)

*Morrow's/Tartarian honeysuckle (*Lonicera morowii* or *L. tartarica*)

Virginia creeper (*Parthenocissus quinquefolia*)

Herbs

wild rye (*Elymus* sp.) – should be checked later in the summer as there are some rare species

violet (*Viola* sp.)

ostrich fern (*Matteuchia struthiopteris*)

wild ginger (*Asarum canadense*)

Dutchman's breeches (*Dicentra cucullaria*)

toothwort (*Dentaria diphylla*)

sensitive fern (*Onoclea sensibilis*)

tall meadow rue (*Thalictrum pubescens*)

wild leeks (*Allium tricoccum*)

Canada lily (*Lilium canadense*)

dock (*Rumex* sp.)

*Japanese knotweed (*Polygonum cuspidatum*)

*dame's rocket (*Hesperis matronalis*)

*moneywort (*Lysimachia nummularia*)

*garlic mustard (*Alliaria petiolata*)

Appendix F. Tree Inventory

THE TREES AND A FEW SHRUBS AT SYCAMORE PARK, BRISTOL, VT
BY DAVID BRYNN AND DAVE HENDERSON -- APRIL 2005

Blue flagging with black number

No.	Species	Scientific Name	Comments
1	Cottonwood	<i>Populus deltoides</i>	Huge tree. Triangular leaf.
2	Sugar Maple	<i>Acer saccharum</i>	Hard bark. Opposite pointed buds.
3	American Elm	<i>Ulmus americana</i>	Zig zag twigs. Leathery leaves.
4	Basswood	<i>Tilia americana</i>	Obovate buds and leaves. Fissured bark. Grows in clumps.
5	Eurasian Honeysuckle	<i>Lonicera</i>	Invasive exotic. Small leaves. Nice smelling flowers. Whispy plant.
6	Green ash	<i>Fraxinus pennsylvanicum</i>	Fissured bark, Compound, opposite leaves.
7	Hardhack, Ironwood	<i>Ostrya virginiana</i>	Shaggy bark.
8	Box Elder	<i>Acer negundo</i>	Opposite, compound leaves. Messy tree. Also called Ash-leaved Maple
9	Yellow Birch	<i>Betula allenghaniensis</i>	Golden birch bark. Wintergreen flavored twigs.
10	Nannyberry	<i>Viburnum lentago</i>	Opposite leaves.
11	Japanese Knotweed	<i>Fallopia japonica</i>	Invasive exotic. Bamboo-like.
12	Black Cherry	<i>Prunus serotina</i>	Long leaves with orange hair along petiole
13	Sycamore	<i>Platanus occidentalis</i>	Platey bark.
14	White pine	<i>Pinus strobus</i>	Five needles per cluster
15	Balsam fir	<i>Abies balsamea</i>	Flat needles born singly
16	Apple	<i>Malus spp.</i>	
17	Paper Birch	<i>Betula papyrifera</i>	White exfoliating bark.
18	Red Oak	<i>Quercus rubrum</i>	Tight, dark bark. Oak leaves with bristles on

**The natural community type found along the river is referred to as the Sugar Maple - Ostrich Fern Riverine Community.*

Appendix G. Bird Inventories

G1. July/Aug 2006 – Edith Stock Trust - Sycamore Park Bird List

Least flycatcher
Cedar waxwing
Eastern Kingbird
Great crested flycatcher
Common yellowthroat
Yellow warbler
Redstart
Black and White warbler
Red wing blackbird
Common merganser
Tree swallow
Bank swallow (probable)
Robin
Crow
Blue jay
White breasted nuthatch
Downy woodpecker
Hairy woodpecker
Song sparrow
Catbird
Northern oriole
Solitary vireo
Red eyed vireo
Goldfinch
Indigo bunting
House wren
Turkey vulture
Red tailed hawk
Sharp shinned hawk
Kingfisher
Mourning dove
Phoebe
Titmouse
Ruby- throated hummingbird
Solitary sandpiper

G2. 27 June 2007 – Bird Observations, Sycamore Park

Provided By Dave Gusakov and Jordan Engel

cardinal
redwing blackbird
catbird
song sparrow
bluejay
goldfinch
veery
red eyed vireo
yellow warbler
ringbilled gull
redstart
spotted sandpiper
mourning dove
chestnut-sided warbler
yellowthroat
tufted titmouse
baltimore oriole
black capped chickadee
white-breasted nuthatch

Appendix H. Aquatic Insect Inventory

Sycamore Park, Bristol, VT

Insects collected by Dave Henderson in November 2007; identified by Brian Duffy, a biologist who works in the DEC Biomonitoring and Aquatic Studies Section (The BASS Lab).

Trichoptera:

Family Hydropsychidae

(From what I've read, the three species below were formerly in the genus *Ceratopsyche* and at least two of them are also known as "spotted sedges" by people who fish)

(1) *Hydropsyche slossonae*

(2) *Hydropsyche bronta*

(3) *Hydropsyche sparna*

Ephemeroptera:

Family Heptageniidae, *McCaffertium lutem* (aka, March browns and Cahills)

Plecoptera:

Family Pteronarcyidae, *Pteronarcys biloba*; (aka, Knobbed salmonfly)

Family Perlidae, *Agnetina capitata*; (aka, Golden Stone)

Family Perlodidae, *Isogenoides hansonii* (aka, Appalachian springfly)

