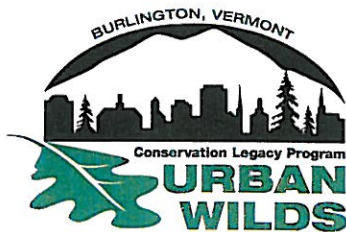


Mount Calvary Red Maple Wetland
A Burlington Natural Area
Management Plan

Prepared for Burlington Housing Authority



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May 2005

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APPENDICIES:

1. Vegetation Inventory
2. Public Meeting Agenda
3. Venus Ave Title Sheet
4. Vermont Nongame and Natural Heritage Program 2004 Report
5. Significant Hardwood Swamps of Vermont, 2004
6. Conservation Easements
7. Suggested Signage

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The Vermont Housing and Conservation Board has provided the funding for this management plan.

The following document was used as a model in the development of this plan; Arms Grant Property; Inventory, Assessment & Management Plan, Prepared by the Winooski Valley Park District, For the City of Burlington Department of Parks & Recreation, April 2003.



Figure 1

Executive Summary

The Mount Calvary Red Maple Wetland (MCRMW) is a 12.2-acre natural area located in a densely populated neighborhood in Burlington's New North End. Much of the site is characterized by a rare natural community type: a Sandplain Swamp variant of the Red Maple-Sphagnum Acidic Basin Swamp natural community. The smaller upland portion of the site is characterized by a White Pine-Red Oak-Black Oak Forest natural community and a relatively recently disturbed region of colonizing birches and poplars. The site provides habitat for populations of three state rare or threatened plant species.

Active Management of the MCRMW is necessary to protect the site's unique ecological values while providing opportunities for public recreation and education. The primary goals of this Management Plan are: 1) to provide a framework for protecting biological diversity at the MCRMW and conserving the rare species and significant natural communities and the ecological processes that sustain them, 2) to prevent further degradation of the site from human activities that threaten or impact the conservation targets, and 3) to foster non-commercial, recreational and educational use of the property which is compatible with the conservation goals.

Over the years, Mount Calvary Red Maple Wetland has been called many names. Vermont Nongame and Natural Heritage Program calls it the Mount Calvary Cemetery Swamp. Burlington Housing Authority refers to the area as Mount Calvary Red Maple Swamp Natural Area. For the purpose of the management plan and in accordance with the City Of Burlington, Code of Ordinance, the area will be identified as the Mount Calvary Red Maple Wetland (MCRMW), designated as an Urban Wild under the Conservation Legacy Program.

The preservation of the Mount Calvary Red Maple Wetland is the result of a partnership between the Burlington Department of Parks and Recreation, the Burlington Conservation Board, the Burlington Housing Authority, and the Vermont Housing and Conservation Board. These organizations were brought together by a dual-propose project involving natural area conservation and affordable housing development. This project comprise of three easement transactions. This plan covers the management of four contiguous parcels of land that include one parcel owned by the City of Burlington and three parcels owned by Burlington Housing Authority with easements conveyed to the City of Burlington and Vermont Housing Conservation Board. The 12.2-acre site is designated as an Urban Wild under the City of Burlington's Conservation Legacy Program.

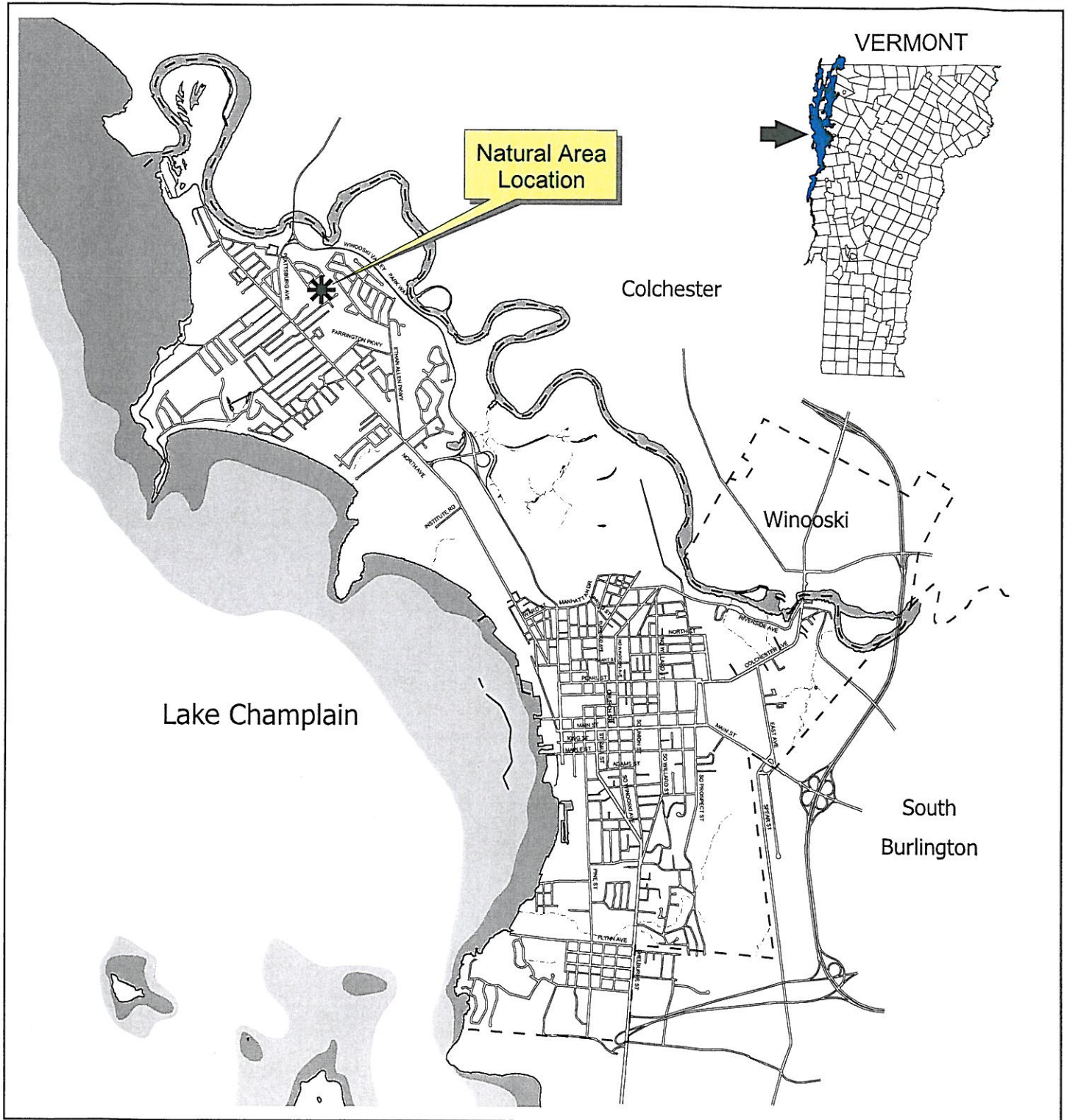
Funding for the conservation elements of this project are provided by the Vermont Housing and Conservation Board. Once adopted, any changes to the Management Plan must be authorized by the City of Burlington, Department of Parks and Recreation, with concurrence from the Burlington Conservation Board and the Vermont Housing and Conservation Board.

This plan provides management recommendations to protect the natural values and enhance recreational values without negatively impacting the area. Summarized below are the highest priorities:

- Evaluate the trail system to reroute away from sensitive areas and design year round accessibility.
- Install boundary signs that educate visitors that the property is a City managed Urban Wild.
- Erect a fence along the western boundary of Natural area to restrict access to one designated area at the northwest corner.
- Install welcome signs at the three entrance points to the Natural Area, Sunset Ave, Venus Ave, and Franklin Square.
- Create an official trail map of authorized trails after rerouting present system.
- Continue to remove old debris such as old fence post and work with area residents to eliminate trash and yard waste dumping.
- Support a neighborhood park steward group.



Mount Calvary Red Maple Swamp Natural Area
Burlington, Vermont



Introduction

The Mount Calvary Red Maple Wetland (MCRMW) is a 12.2-acre natural area located in a densely populated neighborhood in Burlington's New North End. Much of the site is characterized by a rare natural community type: a Sandplain Swamp variant of the Red Maple-Sphagnum Acidic Basin Swamp natural community. This natural community is one of only four known types in Vermont.ⁱ The smaller upland portion of the site is characterized by a mixed upland forest and a relatively recently disturbed region of colonizing birches and poplars. The site provides habitat for populations of three state rare/threatened plant species.

Residents of the surrounding neighborhoods use the site for recreating and walking to school. Area children have constructed numerous forts, tree houses and other play areas.ⁱⁱ The site is also used for unauthorized trash and yard waste disposal, and large quantities of trash and debris remain despite recent clean-up efforts.

Recently designated as an Urban Wild by the City of Burlington, the Department of Parks and Recreation has initiated education and outreach efforts to create awareness about the property and to undertake general site improvements. Over 20 kids from Burlington helped collect debris and general litter from the site at a community clean up event held on National Public Lands Days in September 2004. A public meeting was held on March 29th, 2005 at the Franklin Square Community Room to discuss the draft MCRMW Management Plan. Flyers and direct mail were used to reach over 100 surrounding homes. The Community Economic Development Office and two Vista volunteers assisted with outreach efforts.

The preservation of the MCRMW is the result of a partnership between the Burlington Department of Parks and Recreation, the Burlington Conservation Board, the Burlington Housing Authority, and the Vermont Housing And Conservation Board. These organizations were brought together by a dual-propose project involving natural area conservation and affordable housing development. Under this partnership, three easements were conveyed to the City and the Vermont Housing and Conservation Board. The Vermont Housing and Conservation Board provided funding for the creation of this management plan and conservation elements of the project.

This management plan was developed as part of the Burlington Conservation Legacy Program for the Burlington Housing Authority. For the purpose of the management plan and in accordance with the City Of Burlington's Code of Ordinance, the site will be identified as the Mount Calvary Red Maple Wetland, and will be managed as an Urban Wild under the City's Conservation Legacy Program. This plan covers the management of a contiguous block of undeveloped land comprised of four contiguous parcels (Map; Natural Area Ownership): three parcels have easements conveyed by the Burlington Housing Authority to the City of Burlington and the Vermont Housing and Conservation Board (Parcels 1,2 and 3), and one parcel owned by the City (Parcel 4). The City of Burlington is responsible for management of the property. Any changes to the Management Plan must be authorized by the City of Burlington, Department of Parks and Recreation, with concurrence from the Burlington Conservation Board and the Vermont Housing and Conservation Board.

Conservation Legacy Program

In October 2000, the Burlington City Council adopted the Burlington Open Space Protection Plan. Following the recommendation of this plan, the Burlington Conservation Legacy Program was created.ⁱⁱⁱ One of the goals of this Program is to develop management plans for unique natural areas within the Burlington Parks system such as the MCRMW.

Urban Wilds

The MCRMW will be managed as an Urban Wild a new land category that was introduced as part of the Conservation Legacy Program in 2002.^{iv} Urban Wilds are designated City properties that “provide habitat for rare and endangered plant and animal communities, wetlands and other riparian systems, floodplain, unique geological and hydrological features, important wildlife habitat and travel corridors, areas important for scientific research and education, scenic views, trails, passive recreation, sustainable forest communities, and cultural features.”^v The management goals for Urban Wilds lands are: (1) to preserve the natural features that make those lands unique; (2) to encourage compatible and appropriate levels of passive recreation; (3) to conserve the areas for the benefit of future generations.



Figure 2 Entrance from Franklin Square

Mount Calvary Red Maple Wetland Property Description

Location and Access

The MCRMW is located in a densely populated neighborhood in Burlington's New North End, immediately to the east of the Franklin Square Development off of North Avenue. The property is accessible to the public from Franklin Square and from the southern ends of Sunset Drive and Venus Avenue to the north.

Boundaries

The MCRMW is bounded by single-family home residential properties to the north, east and south, and by an apartment complex and the corner of the Mt. Calvary cemetery to the west. The 60-unit apartment complex at Franklin Square to the west includes amenities such as a playground and basket court. A paved parking area at Franklin Square is located directly adjacent to the western boundary of the MCRMW. A fence clearly defines most of the southern and all of the northern property boundaries.

Present Facilities

The MCRMW is an undeveloped natural area that has not been actively managed in the past for recreational or educational purposes. There are no authorized structures present on the property, and signage is limited to a single posting on Sunset Drive notifying the public that dumping is not permitted. The site currently lacks amenities normally associated with developed parks, such as designated parking areas, signage and formal trails.

Extensive quantities of debris and trash still remain on the property. Most noticeable are the remnants of a metal fence that ran from east to west on the south side of the property near Birch Court. The fence posts were installed with concrete footings. Most of the posts are still standing, however, a few have come free and are lying on the ground. Other large items include old mattresses, tires and possibly cars.^{vi} A number of structures such as forts and tree houses have been constructed by area youth over the years and some of these remain at the site. A makeshift structure constructed on the site by area youth has been the subject of public complaints.

An informal trail network meanders through portions of the site. While trails do exist in the area, they are not clearly defined. Due to the annual inundation of portions of the wetland, several trails are flooded for extended periods. Many of the trails are heavily compacted and located in low areas. For example, in the late fall of 2004, which followed a wet summer, some of the trails were still impassible without the use of waders and/or canoe.

Surrounding Land Use

The MCRMW is almost entirely surrounded by residential development. The site abuts the easternmost tip of the Mount Calvary Cemetery. Flynn Elementary School and Hunt Middle School are both located within a mile of the property. Numerous small businesses ranging from daycares to gas stations are located along North Avenue to the West.

Regional Population Demographics

The MCRMW is located in Burlington, Vermont's most populous city according to the 2000 Census. The population of Burlington has increased slightly in recent years. In contrast, the New North End of Burlington, where the MCRMW is located, has grown rapidly over the past half century. This development has substantially reduced the amount of remaining undeveloped land, and replaced large areas of farmland and forest with the housing developments that now surround the MCRMW. Relatively recent housing developments, such as the extension of Birch Court circa 1990 further reduced and fragmented the remaining block of the rare natural community type found at this site. Eight units of affordable housing are currently (spring 2005) under construction in the once forested area at the northeastern corner of the site.

Socioeconomic Context of Property

The MCRMW is located in a densely populated part of Burlington. Residents value the site for its undeveloped character and recreational opportunities. The surrounding neighborhood is generally composed of middle to lower income households. Franklin Square, a large public housing project, is located directly to the west of the site. The undeveloped land where MCRMW is located has remained open to the public for many years. A city bus stop located on North Avenue at the entrance of the Franklin Square Development provides ready site access for residents and visitors who do not have their own transportation. While the property is generally accessible to the public, improvements for wheelchair access or other types of handicapped accessibility have not been made to date.

Area History

Historical Perspective and Physical Setting

The site is underlain by sediments that were deposited in Lake Vermont and the Champlain Sea, respectively a large post-glacial lake and inland sea that, in turn, extended across most of the Champlain Valley after the last Pleistocene ice sheet retreated. Nine thousand years ago this area was submerged 450 feet under water, as Lake Vermont swelled with glacial meltwater. Silt and clay deposits accumulated on the Lake bottom. As Lake Vermont receded over the next one thousand years, a large sandy delta formed where the Winooski River emptied into the Lake. Lake levels continued to recede over time, eventually exposing the deltaic sandplain. The remnants of these sedimentary deposits form the parent material and soils that underlies the MCRMW. The thick layer of low permeability silt and clay four feet below the deltaic sands coupled with the site's concave morphology and lack of an outlet for surface water are responsible for the high water table and wet conditions that characterize much of the site.

Evidence such as the remnants of barbed wire and the presence of open-grown white pines suggests that wetland and upland forests at the MCRMW occupy areas that were formerly cleared and used for pasturing livestock. The estimated ages of some of the largest maples and pines suggests that the maintenance of open pastures may have been abandoned approximately 90 years ago.^{vii} It was a relatively common practice to let livestock graze in forested areas. The estimated ages of approximately 130 to 140 years

for some of the black gum trees in the forest canopy suggests that portions of the site may have been abandoned at an earlier date.^{viii} Old ditch lines that run through portions of the wetland hint at past attempts to drain the land or lower the water table, however, the date(s) for these activities are not known.

Acquisition History

BHA owns Parcel 1 and 2. William Hauke Jr previously owned Parcel 3 and sold it to BHA. The City of Burlington acquired Parcel 4 from Hauke in a separate land transaction.

Resources of the Mount Calvary Red Maple Wetland

Natural Communities

The wetland at the site is classified as a rare Sandplain Swamp variant of the Red Maple-Sphagnum Acidic Basin Swamp natural community. This type of forested wetland has been identified at only four other locations in Vermont, and possesses local and statewide significance due to its rarity. This natural community type typically forms on poorly drained sandy soils, which are underlain by an impeding layer of silt or clay that retards drainage and results in seasonally high water tables.^{ix} During a dry summer the water table in the wetland normally drops and most of the pools of standing water dry up.

The swamp's hummocky terrain supports a patchwork of wetland and upland plant species whose locations partially correspond to soil moisture conditions and the duration of surface water inundation. Much of the following information about the site's vegetation is included in a 1992 report prepared by Continuum Associates, a UVM student research group.^x The wet depressions are dominated by low-growing wetland plants including four species of *Sphagnum* and approximately ten other species of moss. The forest canopy is characterized by red maple (*Acer rubrum*), swamp white oak (*Quercus bicolor*), white pine (*Pinus strobus*) and scattered pitch pine (*Pinus rigida*), which typically grow on 12 to 24 inch high organic hummocks and other slightly elevated areas in the wetland. Understory shrubs include typical wetland species such as winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*) and chokeberry (*Aronia melanocarpa*). The hummocks and other slightly elevated areas within the swamp support an herbaceous flora that is similar to that in the drier White Pine-Red Oak-Black Oak Forest to the east. Two hummocks in the wetland supports small population of Yellow Bartonian (*Bartonia virginica*), a state-listed rare plant species.

The forested swamp is significant for several wetland functions and values, including storm water retention, surface and groundwater protection through sediment retention, and nutrient removal and transformation, hydrophytic vegetation habitat, threatened and endangered species habitat, education and scientific research, and recreation.

A White Pine-Red Oak-Black Oak Forest natural community characterizes uplands at the site and an early successional forest characterized by a birch and poplar overstory. The mixed upland forest is dominated by species that can tolerate the low nutrient and acidic

conditions that characterize the sandy soils. Common overstory species include white pine (*Pinus strobus*), red oak (*Quercus rubra*), white oak (*Quercus alba*) and paper birch (*Betula papyrifera*). Pitch pine (*Pinus rigida*) has been noted in this natural community, suggesting that the site may have been influenced by fire to some extent in the past. The populations of two state-listed rare and threatened species - Black Gum (*Nyssa sylvatica*) and Large Whorled Pogonia (*Isotria verticillata*) are located in this upland forest community.

Flora

Large Whorled Pogonia (Isotria verticillata)

The Large Whorled Pogonia is a perennial orchid that is protected as a Threatened species under the Vermont Endangered Species Law.^{xi} This species is characteristically found in forested sites with acid soils.^{xii} A Canadian website indicates that the species occurs in dry to damp hardwood to mixed forests and along the mossy edges of fens.^{xiii} Another source indicates that the species typically requires rich, moist deciduous or mixed forest on sandy soil with a thick leaf litter and lots of humus that provide rich and moist growing conditions, and that it favors a forest canopy that is relatively open.^{xiv} Local records from the Pringle Herbarium at the University of Vermont indicate that local occurrences are most commonly from sites characterized by dry, open, medium-aged second growth pine or pine-mixed hardwood forests, such as those found in a sandplain community.^{xv}

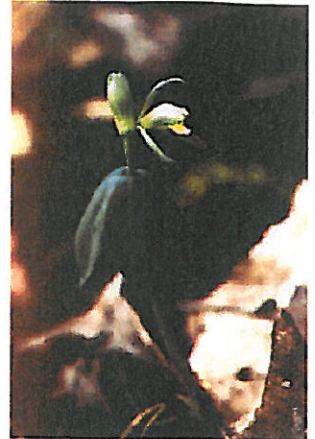


Figure 3 Large Whorled Pogonia

Large Whorled Pogonia commonly reproduces by sending up new basal leaves and flowers from the shallow fibrous roots that extend horizontally from individual plants. Not all the plants flower each year; many send out sterile shoots. Population sizes of *Isotria verticillata* are best determined during the early months of summer when the flowering stems are visible. Like many orchids, the ecology of the Large Whorled Pogonia is linked to very specific pollinators and to the presence of mycorrhizal fungi in the soil. Solitary bees pollinate the species – bee species that don't live communally like honeybees - from three specific families of bees. The mycorrhizal fungi may help plants obtain nutrients from the soil in acidic environments.

In 1988 a Vermont Non-Game and Natural Heritage Program Botanist Elizabeth Thompson discovered a population of 100-200 plants clustered in an upland area near the eastern wetland boundary. Approximately 50 plants were in flower and a few of the previous year's fruits were visible.^{xvi} Eleven persistent stems were noted by UVM student researchers in a subsequent survey of the population in the winter of 1992.^{xvii}

Yellow Bartonian (Bartonia virginica)

Yellow Bartonian is an herbaceous annual in the Gentian plant family that is classified as a rare plant species by the Vermont Non-Game and Natural Heritage Program. Yellow Bartonian typically grows in sites with nutrient poor soils, but otherwise occurs in a

diverse range of habitats that include sandy bogs, peat barrens, dry woods, and wet meadows.^{xviii} (Cite sources of info). Like the Large Whorled Pogonia, the viability of this plant species *Bartonia* is linked to at least two other types of organisms – a fungus needed for nutrient uptake and an insect needed for pollination. The species has minute scales for leaves, and obtains nearly all of its nutrients through its roots from a mycorrhizal fungal association.^{xix} (Cite on-line source of info.). This means that a certain species of fungus must be present in the soil in order for Yellow *Bartonia* plants to obtain the nutrients it need to survive, which likely limits the species' capacity to establish new populations. While Yellow *Bartonia*'s pollination requirements were not identified during the preparation of this management plan, this species, like many gentians, is most likely insect pollinated.



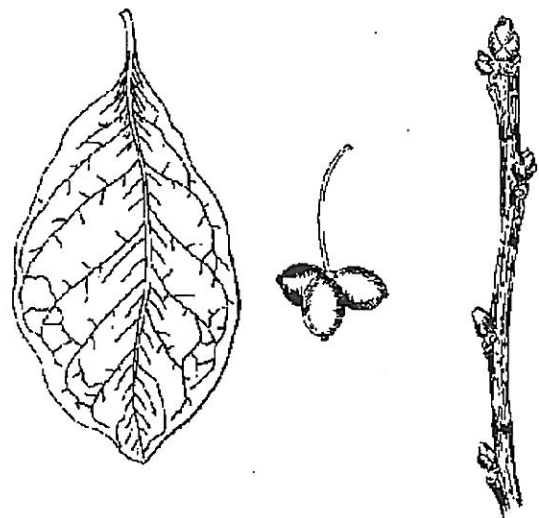
Figure 4 Yellow *Bartonia*

Yellow *Bartonia* was formerly found at several sites in the Burlington area; its current range is limited to one or two organic hummocks amidst the sand and *Sphagnum* of MCRMW.^{xx} In 1988, 5-10 of the previous year's stems of Yellow *Bartonia* were located growing on a hummock at the base of a tree in MCRMW. In 1999, Natural Heritage Program staff recorded ten tall stems presumably from one plant – in MCRMW, and found another six stems at a nearby location

Black Gum (Nyssa sylvatica)

The Vermont Non-game and Natural Heritage Program classify black gum as a rare plant species. The MCRMW black gum population is near the very northern limits of the range for this species, and is a relict of a period of time when the regional climate was significantly warmer than today. Black gum tolerates a range of environmental conditions, including shade and wet soils conditions. While slightly acidic to neutral soils with adequate soil moisture levels create a favorable growing environment for Black Gum, the species is adaptable to a range of site conditions. In its native habitat, its occurrence ranges from swampy woods to well-drained dry upland areas.^{xxi} This attractive tree has outstanding foliage that ranges from dark green during summer to a vibrant scarlet in fall. The fruit, twigs and foliage provide food for a variety of bird and animal species. Black gum is insect pollinated. Black gum honey is produced at certain apiaries in the southeastern U.S. and large quantities of black gum pollen have been identified in some honey samples, indicating that non-native honey bees can serve as one of the species' pollinators. The species native pollinators in this region have not been identified.

Approximately 30 black gum trees have been identified in the MCRMW and a nearby-forested block of undeveloped land that was contiguous with MCRMW prior to the development of the Birch Court extension circa 1990.^{xxii} The actual number of trees currently within the MCRMW



has not been determined. Approximately 15 of the trees form part of the forest overstory in these two locations; the oldest is approximately 140 years old.^{xxiii} Regeneration in the black gum populations has not been evaluated to determine if the species is actively reproducing. In 1992, researchers noted that “young black gum colonization is modest, but trees growing in recently disturbed, open areas appear vigorous”, but their research made no mention of seedlings or other signs of current regeneration.^{xxiv}

Soils

The wetland at the site is characterized by Au Gres soils, which are somewhat poorly drained to poorly drained sandy soils that often form in concave depressions on water-deposited sand and gravel, such as the sandplains of Burlington’s New North End.^{xxv} While sandy soils are frequently well-drained, high permeability of the Au Gres soils is coupled with underlying low-permeability subsoil that impedes drainage and results in seasonally high water tables.^{xxvi}

The upland forest soils to the northeast of the wetland consist of Adams and Windsor loamy sands and Duane and Deerfield soils. Adams and Windsor loamy sands are deep, loose, excessively drained, and acidic soils that develop in sandy beaches, deltas, and terraces.^{xxvii} Many of the characteristics of Duane and Deerfield soils are similar to the Adams and Windsor series, as they are deep, loose, medium acidic and sandy. The Duane and Deerfield soils, however, have a higher seasonal water table, which typically rises to less than two feet below the ground surface from late fall to early spring.

Climate

The MCRMW is located in northwestern Vermont in the Champlain Valley biophysical region, which is characterized by generally low elevations, warm temperatures, and relatively less precipitation than most of the state. The Champlain Valley climate is typically warmer and drier than most areas in Vermont. The growing season is close to 150 days. Average annual precipitation is typically only about 28 inches near the Lake in the Champlain Valley, compared to up to 70 inches in the Green Mountains.^{xxviii}

Current Value in Landscape Context

This property represents a refuge for plant and animal species that have been displaced by housing developments that surround the area. The MCRMW is an important component in biological diversity of Vermont. The area harbors rare and threaten plant species and provides wildlife habitat and possibly a rest stop for animals traveling from the nearby natural known as the Intervale to Lake Champlain.

Other values include:

- Surface water quality protection
- Storm and floodwater conveyance and storage capacity
- Sediment trapping
- Nutrient retention
- Shoreline anchoring

Natural Communities

MCRMW is one of only four known examples of the rare sandplain swamp variant of red maple-sphagnum acidic basin swamps community types. These poorly drained sandy soils have an underlying impeding layer of silt or clay that retards drainage and results in seasonally high water tables.^{xxix} Normally this area should dry out during the summer months but due to an extremely wet year of 2004, the area remained saturated and parts were impassible without the use of waders or a canoe.

Fauna

The MCRMW is home to following wildlife;

- Grey Squirrel
- Raccoon
- Skunk
- Chipmunk

Recreational Resources

The MCRMW provides a variety of outdoor recreation opportunities for area residents and visitors. The site can be used for snowshoeing and cross-country skiing during the winter months. Short walks through the natural area can be taken when the informal trail network is not inundated. The forest provides habitat for a variety of plants and animals, which contribute to the site's value as a natural area and for nature study and observation. The remnants of numerous forts, shelters, and play sites within the forest attests to the site's value as a natural playground for area kids.

Public Access

The MCRMW is open to all Burlington residents and visitors. BHA currently provides public access through the Franklin Square Development off of North Avenue. Parking is available on the east end of the Franklin Square Development. Public access will eventually be available from the southern end of Venus Avenue, when an ongoing 8-unit residential construction project has been completed. The area is also accessible on foot from the southern end of Sunset Drive.

Conservation Planning

The primary goals of this plan are: 1) to provide a framework for protecting biological diversity at the MCRMW and conserving the rare species and significant natural communities and the ecological processes that sustain them, 2) to prevent further degradation of the site from human activities that threaten or impact the conservation targets, and 3) to foster non-commercial, recreational and educational use of the property which is compatible with the conservation goals. Understanding the potential threats and stresses to conservation targets at the site is a precursor to establishing and implementing specific management practices and policies.

These goals will be advanced by conserving this property because it possesses the following attributes: locally significant wetland habitat, at least two rare plant species, one which is listed on the Vermont State threatened list, natural upland forest habitat that serves as a buffer to wetlands; and one of the few remaining natural areas within the City of Burlington.

Conservation Vision

The MCRMW is permanently protected site that includes high quality examples of a rare wetland natural community and upland natural community typically associated with a forested sandplain ecosystem, and supports viable populations of rare and threatened species. The natural area is treated as a valuable neighborhood and citywide resource that is stewarded by and informally protected by neighbors and other residents, and provides recreational and educational opportunities for the public which are compatible with the conservation goals.

This vision is of the future and how the property will continue to thrive in a healthy environment with support from neighboring communities as an Urban Wild. It is important to protect rare plant species today so that they will still be around for future generations. By actively managing and monitoring the property, natural communities will be able to survive and provide diverse animal habitats. Progressive education and community support will ensure that dumping of debris and yard waste ceases. Proper management will ensure public access is guaranteed for future generations.

Conservation Targets

While it is helpful to prioritize natural features that are most unique and sensitive in a given area, this prioritization does not imply that the rest of the natural features on the property are not important and worthy of protection. After all, the entire ecosystem is required in order to support all of the various species that are found in it. With limited resources, however, it is necessary to designate specific areas that are more sensitive than others so that management decisions can focus on protecting those areas.

The conservation targets on this property include:

1. Viable habitat for rare and threatened plant species.

Common Name	Scientific Name	State Status
Yellow bartonia	<i>Bartonia virginica</i>	Rare
Large whorled pogonia	<i>Isotria verticillata</i>	Threatened
Black gum	<i>Nyssa sylvatica</i>	Rare

2. A Sandplain Swamp variant of the Red Maple-Sphagnum Acidic Basin Swamp, a natural community that has been identified at only four locations in Vermont, and possesses local and statewide significance due to its rarity.
3. An upland forest community that provides habitat for two rare plant species and serves as a buffer between residential development and a portion of the wetland.
4. An intact block of contiguous forest in a densely developed area that includes representative examples of the types of natural communities that likely formerly characterized much of the sandplain that underlies the New North End of Burlington.

Stresses and Threats to Conservation Targets

A threats assessment will help to identify high priority threats to the site's conservation targets. This assessment, in turn, will help guide the development of appropriate

strategies to address high priority threats, and to identify situations where immediate, active, or ongoing management is a preferred option for ensuring the long-term viability of the conservation targets.

There are no known immediate threats to the rare plant at MCRMW, however, the human and environmental factors that influence the populations have not been systematically identified, and the long-term viability of these populations is not known. And while the remaining block of the rare wetland community at the site is relatively intact, it has certainly been reduced in size by encroaching development. The rare plant species at MCRMW have all likely been impacted by the historical loss of habitat, and may have been impacted by the loss of habitat for their respective insect pollinators as well. Populations of Black Gum that used to occupy one larger forested block that included the MCRMW are now separated by a housing development. The populations of Yellow Bartonian and Large Whorled Pogonia at the site are far from any other populations.

A comprehensive threats assessment has not been completed to identify high priority threats to the conservation targets in the MCRMW, nor has the impact of past land use activities and habitat loss or alteration been evaluated. The locations of the rare and threatened plant species have not been accurately located and mapped, and the proximity of specific human activities and types of potential disturbances to the conservation targets has not been evaluated. The extent to which environmental site conditions favor or deter the reproductive success and long term viability of the populations of the rare and threatened species at the site has also not been evaluated.

The following incomplete list of potential threats is simply a starting point for grappling with the types of management issues that accompany rare plant and natural community protection at a site that has a long history of human activity and land use, and will likely see substantial number of visitors in the future. Many of the potential threats may not be immediate or may have a low probability of occurring. The preferred management actions for addressing some types of potential threats will likely be relatively straightforward (e.g. rerouting a path, removing debris, not publicizing rare plant locations). In contrast, some types of potential threats may raise the issue of whether or not to pursue specific management activities (e.g. altering the surrounding vegetation). For example, if plant community succession appears to reduce reproductive success or excessively shade a rare plant population, will the overstory be thinned or understory vegetation removed to improve growing conditions for the conservation target?

Historically, the greatest overall threat to the rare species at MCRMW most likely has been habitat loss. The rare species appear to have survived the large-scale deforestation and conversion of much of the land to agriculture that characterized the site following European settlement through the nineteenth century. However, the species are unlikely to have survived in any other sections of Burlington's New North End or elsewhere in the region where the dominant land use is relatively closely spaced residential housing.

Current potential threats to the two herbaceous rare plant species – Large Whorled Pogonia and Yellow Bartonian include trampling and soil compaction, botanical collecting, vandalism, trash and debris disposal, trail construction and rerouting, fort

construction and other play-related site disturbances, site clean-up activities – in particular the use of heavy equipment, invasive species, pollinator habitat loss, and surface water or groundwater pollution. Several natural processes, many linked to former or past land use practices and other human activities include shading caused by the growth of woody species, impacts to mycorrhizal fungi and their habitats, water table fluctuation and alteration, herbivory, and disease. The trees in the Black Gum population were characterized as “in excellent condition” in 1992, however the presence and condition of seedlings were not mentioned^{xxx}. If any seedlings are currently present they would potentially face a suite of stresses similar to those that merit consideration for Yellow Bartonian and Large Whorled Pogonia.

General Management Discussions

The area is very wet and there is evidence of intense dumping from household waste to yard waste. Special consideration needs to be taken when organizing volunteer groups and trail construction projects.

Proposed Policies

The site will be managed to encourage recreational uses that have minimal impact and are compatible with conservation goals, such as hiking, snowshoeing, cross country skiing, wildlife viewing, etc. Educational programming to promote the conserved area to the general public should be encouraged, however, schools and other organizations should obtain permission from the Department of Parks and Recreation before conducted site visits or large field trips.

- No new physical improvements or structures are permitted except as outlined in the conservation easements and this Management Plan.
- No motorized vehicles are allowed in the natural area, including, but not limited to youth battery operated toy vehicles, mopeds, all terrain vehicles, and snowmobiles.
- Cutting, removing or harvesting plant species is prohibited except: 1) as needed to maintain rare plant populations under an approved management prescription, 2) as allowed under the conservation easement to relocate and or maintain trails 3) to gather samples for educational purposes with the permission of the Burlington Conservation Board and Department of Parks and Recreation.
- Biking is prohibited from any portion of the Natural Area. Biking has an adverse impact upon wet trails leaving ruts and causing trails to widen as bikers maneuver around obstacles.
- The disposal of trash, yard waste and other types of abandoned items is prohibited.
- Residential, commercial, industrial or mining activities are prohibited.
- Buildings and other structures, including but not limited to telecommunication towers, are prohibited except as need to implement recommendations within this management plan.
- Signage that is not consistent with the purpose of this management plan is prohibited.

-
- Motorized or mechanized vehicles are not permitted unless necessary to carry specific recommendations of this management plan.
 - The construction of play structures (e.g. tree houses, forts) is prohibited on the conserved property. All existing structures will be dismantled and removed.

Specific Management Task

The wetland area on the western end of the site is believed to support several rare plant species: the large whorled pogonia, (*Isotria verticillata*), which is listed on the Vermont state threatened species list, yellow bartonia (*Bartonia virginica*), and black gum (*Nyssa sylvatica*). The land is currently used by the surrounding neighborhoods for recreating, walking to school, building tree houses. And sometimes area residents dispose of yard waste and dump trash. There are several well-used trails on the property.

Conservation targets

Accurately identify the locations of rare species and map the boundaries of the significant natural communities. Hire a qualified ecologist or botanist: to 1) conduct a vegetation survey of the property, and 2) evaluate the current condition and viability of the three rare plant populations, complete a threats assessment to identify threats to the conservation targets, and recommend strategies for addressing high priority threats.

Monitor populations of the rare plant populations on an annual basis.

Identify and implement appropriate management actions to address high priority threats.

Develop policies that guide the implementation of management actions, which require physical or biological alterations to the site (e.g. thinning the forest canopy).

Entrances and Perimeter

There shall be three designated entrances to the natural area. A westerly entrance from the Franklin Square development, a Northern entrance off of Sunset Drive and an Easterly entrance from the Venus Avenue cul-de-sac. It will be necessary to fence off the western perimeter to ensure that users do not negatively impact the wetland by creating unauthorized trails. The fence will also discourage dumping protecting the wetland from the continued debris that is illegally deposited. Welcome signs should be clearly displayed at all three designated entrances.

Trails

Develop a plan for constructing a formal trail system that protects the ecological values of the MCRMW while offering the public appropriate opportunities for year-round access, recreation, and education.

Evaluate the current informal trail network and identify any trails that should be improved, closed, or rerouted to prevent further site degradation from overuse, erosion, and/or threatening sensitive ecological areas and rare plant habitat.

Install trail and boundary signs to educate visitors that the property is a City managed Urban Wild.

Consult with the Vermont Nongame and Natural heritage program prior to conducting trail work near any of the rare plant populations. Close and reroute any trails near the populations of Large Whorled Pogonia and Yellow Bartonia

After assessing the threat posed to rare plant populations, improve and maintain the trail used by area children as a shortcut to school.

Utilize Wetland Trail Design and Construction methods for all trail construction, improvement, or maintenance within the wetland ensure that even during the wettest of seasons, visitors will remain on the trails and that the trails will be able to sufficiently support current use.

If logistically and financially feasible, install log benches along the trails where visitors can rest and relax. If benches are installed and graffiti or vandalism becomes an issue that cannot be resolved through public outreach, then the benches should be removed.



Figure 5 Informal Walking Bridge

Install steps on the embankment that leads down on to the property from Franklin Square to ensure public safety and help prevent erosion.

Continue to remove old debris such as old fence post and work with area residents to eliminate trash and yard waste dumping.

Work to acquire adjacent private property to the south that has been identified as part of the Red maple-sphagnum acidic basin swamp.

Consider building a short universal access trail from the entrance of Sunset Drive. A short loop around the perimeter of the wetland would afford wonderful opportunity to users who require a sturdy and relatively flat trail to traverse. This would increase the diversity of users and the impact of the natural area on the community.

Public Awareness and Education

The MCRMW is primarily owned by Burlington Housing Authority, however management responsibilities fall under the Burlington Department of Parks and Recreation. The Parks and Recreation Department, in consultation and coordination with

the Conservation Board and Conservation Legacy Program, will be responsible for implementing the Management Plan and conducting education and public awareness and outreach activities.

Install signage that encourages visitors to value the property as a unique natural resource that protects significant conservation elements while remaining open to the public. Signage should include a list of use guidelines and prohibited activities, such as dumping yard waste and debris. Signage should also include a simple map or description of trails, and possibly a box used to distribute interpretive materials such as a brochure or announcements about volunteer opportunities on the property.

Install a limited number of small “urban wild” signs along the property boundaries to indicate that the land is a natural area that it is protected and managed by the City. Limit the number of signs so as not to detract from the sense that the property is a natural area.^{xxxi}

Notify all area residents that dumping yard waste and debris, cutting trees and storing items on the conserved property is not permitted.

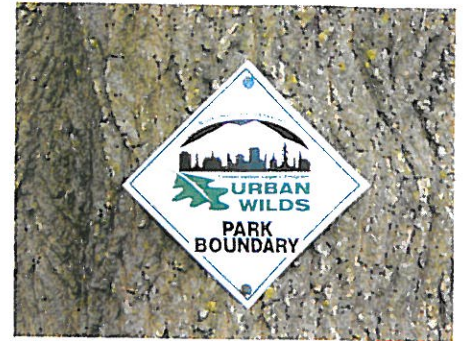


Figure 6 Boundary Sign

Provide volunteer opportunities for the public, in particular area residents, to help steward the property to increase local support for Burlington’s Urban Wilds, and, specifically, to develop a group of stakeholders who will assist in protecting the MCRMW. An informal friends group overseen by Department of Parks and Recreation will support long-term sustainability of the MCRMW.

Volunteer opportunities can involve individuals working on their own or large groups gathered for a whole day of work. The Conservation Legacy Program will be responsible for organizing and leading volunteer opportunities. Suggested volunteer roles:

- Trail Monitors – One or two people that walk the trails on a regular basis and report any hazardous trails conditions (i.e. dangerous trees overhead or large limbs in trails) and note the construction of new unauthorized trails.
- Trash clean-up crews.
- Wildlife tracking
- Rare species monitoring. Trained volunteer(s) who could annually monitor the populations of the Large Whorled Pogonia and Yellow Bartonian.

Invasive Species Control

As part of the vegetation inventory, identify any non-native invasive species.

Complete a threats assessment to identify the potential threat posed by invasive species to conservation targets.

Evaluate management options for addressing high priority invasive species threats.

The Update the Management Plan as needed to address any invasive species threats identified during the survey.

Boundaries

Clearly mark all site boundaries. Retain and repair existing fences along the northern and eastern boundaries. Construct a fence along the westerly side of the eight unit affordable housing development at the end of Venus Avenue and along Franklin Square Housing.

Work closely with abutting neighbors to ensure that at boundaries remain clearly marked and that homeowners/renters do not extend their activities onto the conserved property.

Education and Outreach

Conduct an annual community clean up event until the site is clear of trash, yard waste, and other debris. Conduct future clean up events every couple of years after completing the initial clean up.

Organize nature walks and site visits for the public.

Encourage a neighborhood and citizen park stewardship association with support and oversight from the Conservation Legacy Program

Explore opportunities to facilitate educational programming and encourage a strong role for local schools in the ongoing use and protection of the site.

Community Clean up

A community clean was held on National Public Lands Days in September of 2004. Over 20 kids from the community came to help collect debris and general litter from the area. However, due to the state of saturation, the group was limited by impassable standing water.

A Community Clean up should be conducted on a yearly basis until the site is clear of visible foreign matter. After such time, community clean ups can happen every couple of years. With the installation of signage, dumping of yard waste and debris should be reduced drastically.



Figure 7 Wet Trail with Tire

Large Debris Removal

Throughout the property there are several large items that need to be removed that may require the use of heavy and/or motorized equipment. During the summer of 2004, the site was saturated with standing water covering at least 25% of the area.

Most noticeable are the remnants of a fence line. There use to be a fence that ran from East to West on the Southside of the property a bit north of the Birch Court Housing. The fence posts were installed with concrete footings and most of them are still intact. However, there are a few that have come free and area laying on the ground. It is recommended that the freed post be removed. The situation surrounding the posts in the ground needs to be evaluated. Because heavy equipment might need to be used special precaution needs to be taken to ensure that irreversible negative impacts do not result from the removal.

Other large items include old mattresses, tires and possibly cars.^{xxxii} A thorough search of the property should be completed to understand the full scope of removal project. Area residents should be consulted on this process and encouraged to assist in locating and removing debris.

Conduct a thorough search of the property to identify the full scope of the large debris removal project. Consult area residents to assist in identifying and locating items that should be removed.

Complete the threats assessment and evaluate the suitability of using heavy and/or motorized equipment for large debris removal prior to using any such equipment.

Prior to using any heavy equipment, identify and protect the locations of rare and threatened plant populations.

Restrict heavy equipment use to times of year when the soil surface is frozen or dry.

Remove standing fence posts only if an assessment indicates that the necessary removal activities (e.g. using heavy equipment) will not result in irreversible impacts to the site

Under the supervision of the Parks and Recreation Department remove all large discarded or abandoned items that remain on the site, such as fence posts, tires, old mattresses, and possibly cars.

Signage and Interpretive Installations

Install informational and interpretive signage to educate the public and create a sense of appreciation for the MCRMW. Include signs and exhibits that explain the value of the area to the community and the rules visitors should follow.

After completing the ecological inventory determine appropriate locations for interpretive signage within the natural area.

Install informational boards with appropriate pictures and graphics at public access points such as Franklin Square and the Venus Avenue Extension developments to welcome residents and visitors and to explain the importance of the MCRMW.

Acknowledge Vermont Housing and Conservation Board on any signs that mention funding sources.

Limit the number of signs within the natural area.

A possible themes for interpretive signage to enhance the public's educational experience include: structure and function of wetlands, differences between swamps and other wetland types, forest succession, characteristics of uplands vs. wetlands, animal habitats, and the relationship between this natural area and its urban setting. The protection and stewardship of the area can be incorporated in each of listed themes.

Restricted Uses

Residential, commercial, industrial or mining activities are not permitted on the property. Additionally, no building or structures including but not limited to telecommunication towers are allowed to be constructed or placed on the property except as need to implement recommendations within this management plan. Signage that is not consistent with the purpose of this management plan is not allowed to be erected or displayed on the property.

Motorized or mechanized vehicles are not permitted unless necessary to carry specific recommendations of this management plan. Bicycle traffic will be generally prohibited, but may be allowed on a designated trail, subject to VHCB approval.

The construction of tree houses and/or forts are not permitted anywhere on the conserved property. All structure should be dismantled and removed if material is foreign.

Permitted Uses

Recreational uses that have minimal impact, such as hiking, snowshoeing, cross country skiing, wildlife viewing, etc. will be allowed. Educational programming to promote the conserved area to the general public is recommended for this area. Schools and other organizations should retain permission from Burlington Parks and Recreation before conducted site visits.

Signage

Signage needs to be addressed at the Franklin Square and the Venus Avenue Extension developments. There should be an informational board utilizing pictures to explain the importance of the Red Maple Wetland. Signage needs to welcome residents and visitors while informing those of the importance of this natural area.

Any signs erected on the property, which mention funding sources, shall include the Vermont Housing and Conservation Board. All signage placements will follow an ecological inventory to determine the best location for the sign.

Public Meeting

A public meeting was held on Tuesday March 29th at 6pm at the Franklin Square Community Room. Flyers and direct mail were used to reach over 100 surrounding homes. Assistance from Community Economic Development Office and two Vistas were utilized in outreach efforts. Participants expressed their concern over access, clear signage year round trail usage and prohibiting bicycle use within park boundaries.

References

- ⁱ Hardwood Swamps of Vermont: Some Sites of Ecological Significance. Sorenson, Popp, Lew-Smith, Lapin and Ferguson. 2004 Vermont Department of Fish and Wildlife Department Report.
- ⁱⁱ Roen, Harris. 2000. MCRMS Interim Management Plan Prepared for Burlington Housing Authority.
- ⁱⁱⁱ City of Burlington. 04 February 2002. Resolution Relating to: Conservation Legacy Program.
- ^{iv} City of Burlington. 2002
- ^v Meals, Don and Wayne Gross. 30 January 2002. Burlington Conservation Board Memorandum: City Council Resolution – Conservation Legacy Program.
- ^{vi} Public Meeting, March 29th, 2005 Participant stated they had noticed old abandoned vehicles.
- ^{vii} Peter Neitlich, Karen Cocca, Christian Romeyn, Lawrence Nussbaum. 1992. Mount Calvary Red Maple Swamp: A Conservation Plan. Prepared for Burlington Planning Commission and Burlington Department of Planning and Zoning.
- ^{viii} Neitlich et. Al. 1992
- ^{ix} Hardwood swamps
- ^x Continuum Associates
- ^{xi} Hardwood Swamps of Vermont: Some Sites of Ecological Significance. Sorenson, Popp, Lew-Smith, Lapin and Ferguson. 2004 Vermont Department of Fish and Wildlife Department Report.
- ^{xii} cite Gleason and Cronquist, 2nd ed. 1991
- ^{xiii} Communication with Jeff Severson
- ^{xiv} Communication with Jeff Severson
- ^{xv} Neitlich et. Al. 1992
- ^{xvi} Vermont Non-game and Heritage Program - Jodi Shippee, Personal Communication. 2005
- ^{xvii} Neitlich et. Al. 1992
- ^{xviii} www.ct-botanical-society.org/galleries.bartoniavirg.html
- ^{xix} www.ct-botanical-society.org/galleries.bartoniavirg.html
- ^{xx} Neitlich et. Al. 1992
- ^{xxi} www.hort.net/profile/nys/nyssy/
- ^{xxii} Neitlich et. Al. 1992
- ^{xxiii} Neitlich et. Al. 1992
- ^{xxiv} Neitlich et. Al. 1992
- ^{xxv} Chittenden County Soil Survey
- ^{xxvi} Hardwood Swamps of Vermont: Some Sites of Ecological Significance. Sorenson, Popp, Lew-Smith, Lapin and Ferguson. 2004 Vermont Department of Fish and Wildlife Department Report.
- ^{xxvii} Chittenden County Soil Survey
- ^{xxviii} Eric Sorenson, 2005. Personal Communication
- ^{xxix} Neitlich et. Al. 1992
- ^{xxx} Neitlich et. Al. 1992
- ^{xxxi} Carlson, Brain. 2003. Arms Grant Property Inventory, Assessment & Management Plan. Prepared for City of Burlington Department of Parks & Recreation.
- ^{xxxii} Public Meeting, March 29th, 2005 Participant stated they had noticed old abandoned vehicles.

APPENDICIES:

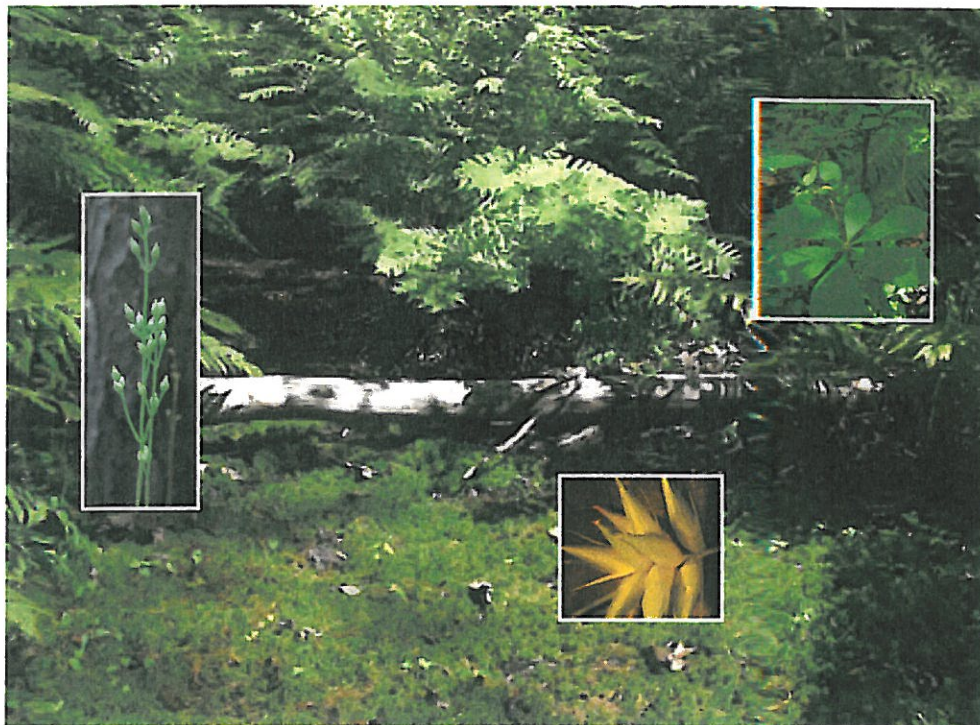
1. Vegetation Inventory and Trail Map
2. Public Meeting Agenda
3. Venus Avenue Title Sheet
4. Vermont Nongame and Natural Heritage Program 2004 Report
5. Significant Hardwood Swamps of Vermont, 2004
6. Conservation Easements
7. Suggested Signage

Report

Vegetation Inventory
Mount Calvary Red Maple Wetland

Prepared for

The City of Burlington
Parks and Recreation Department



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A. Executive Summary

Between May 18 and August 5, 2005, we conducted an inventory and assessment of the Mount Calvary Red Maple Wetland (MCRMW) with special attention to four plant species that are listed as rare (S2) and uncommon (S3) in Vermont. Of these, we found healthy populations of *Bartonia virginica* (Yellow Bartonia, S2), *Nyssa sylvatica* (Black Gum, S2), and *Carex folliculata* (Long Sedge, S3). We did not find any *Isotria verticillata* (Large Whorled Pogonia, S2).

The following report describes the size and conditions of the plant populations we found as well as a description and assessment of the natural communities at the site. Finally, we make some recommendations regarding the location of new trails at the site.

B. Methods

To search for *Isotria verticillata*, we walked the upland portion of the site in 5m transects, parallel to the shorter (Northwest to southeast) boundary of the parcel. When the first search, conducted by both of us simultaneously, did not yield any *Isotria*, one of us (Kerstin Lange) double-checked two of the transects and also paid special attention to signs of *Isotria* during all subsequent fieldwork in this portion of the site.

Black gum (*Nyssa sylvatica*) was surveyed in the same manner as *Isotria verticillata*.

For the wetland species (*Carex folliculata* and *Bartonia virginica*), we found it more effective to navigate directly between hummocks, rather than follow strict transects.

All individuals of the above species that were located during the searches were identified with reference to Magee and Ahles (1999), voucher specimens at the Pringle herbarium (University of Vermont), and photos. All occurrences were recorded with a 76GarminMap GPS unit and waypoints mapped in ArcMap software (see attached map).

The wetland boundary was determined primarily on the basis of vegetation (especially the density of cinnamon fern (*Osmunda cinnamomea*) and highbush blueberry, and hummock-and-hollow topography. Due to the high levels of precipitation this summer, and probably also due to the disturbed hydrology at the site, wetland soil characteristics like gleying and mottling did not seem reliable indicators. Please note that our wetland boundary is not intended to represent a wetland delineation in the legal sense.

The natural communities at the site were assessed with reference to the descriptions in Thompson and Sorenson (2000) and Sorenson et al (2004) according to procedures used by the Vermont Nongame and Natural Heritage Program.

Mount Calvary Red Maple Wetland



C. Incidence of rare and uncommon plant species at MCRMW



1. *Isotria verticillata* (Large Whorled Pogonia), a perennial orchid that is ranked S2 in Vermont and also protected under the Vermont Endangered Species Law, was last seen at the site in 1992, when eleven stems were recorded by Continuum Associates, a group of University of Vermont graduate students (cited in Coven and Severson 2005). A cluster of 100-200 stems was noted in 1988 (Thompson 1988). We did not find any evidence of this species during several searches in late May and early June of this year, the time when any flowering stems would have been most visible. Because this plant does not flower every year, it is possible that *Isotria* is still present at the site but was simply dormant this year. Even though there has been scant research on dormancy in *Isotria verticillata*, studies on the closely related species *I. medeoloides* have found dormancy of up to seven years (Sperduto 1998) and even up to 20 years (Edgar Wherry, cited in Correll 1950). It is also possible that the individuals noted in 1988 were on the parcel owned by the 140 Venus Ave Homeowner Association, which is currently under construction for several homes. Because of the possibility of dormancy, we recommend that the upland portion of the MCRMW be monitored each year in early summer for any signs of *Isotria*.



2. *Bartonia virginica* (Yellow Bartonia), an annual flower in the Gentian family that is ranked S2 in Vermont. Groupings ranging from one to 15+ individuals were recorded on nine separate hummocks in the wetland portion of the site (see attached map). The last previous record for this species (Sorenson 2004 regarding a site visit in 1999) noted *Bartonia* on only two hummocks.

Bartonia virginica is a diminutive-looking plant that can easily be overlooked. Though the plant can get up to 40 cm tall, the individuals at the MCRMW tend to be between 10 and 15 cm tall. The leaves of *Bartonia* are minute scales, and the plant gains virtually all of its nutrition from fungal association rather than through photosynthesis. Stems of *Bartonia* often exhibit ridges indicative of a rotation during growth. *Bartonia* is typically found in the nutrient-poor soils of bogs and peat barrens (Pennsylvania State University, Department of Biology, 2005) and wet meadows (Gleason and Cronquist, 1992). The native range of *Bartonia virginica* is from Quebec and Nova Scotia to Wisconsin and south to Florida and Louisiana (ibid.).



3. *Nyssa sylvatica* (Black Gum), a tree species ranked as S2 in Vermont. This species is rare in Vermont because it is at the northern limit of its range. In addition to five individual trees, three groupings of 5-10 individuals each were recorded in this survey. The largest of these measure about 18 cm dbh (diameter at breast height) and form part of the subcanopy in this portion of the site. One grouping consists of seedlings and saplings, indicating that the

species is reproducing successfully. (Please note that a previous survey cited in the MCRMW management plan [Coven and



Young black gum in front of two adult individuals.

Severson, 2005] also included a smaller block of land adjacent to the Northeast ends of Birch Court and Cayuga Court. This block was contiguous with the MCRMW until approximately 1990 [ibid.].

Good field marks for *Nyssa sylvatica* are the tree's nearly right-angled branching patterns and the oblong to obovate (egg-shaped, attached at the narrow end) leaf shape with leaves often crowding towards the ends of branches and turning bright red in the fall. The bark is a light grey-brown with blocky ridges. Black gum grows most frequently in the uplands and in alluvial stream bottoms from southwestern Maine to New York, to southern Ontario, central Michigan, Illinois, and central Missouri, and south to eastern Oklahoma, eastern Texas, and southern Florida. It is local in central and southern Mexico (Gleason and Cronquist 1992). Black gum is primarily pollinated by insects, especially bees, but pollen is also spread by wind (U.S.D.A. Forest Service, 1990).



4. *Carex folliculata* (Long Sedge), a sedge ranked S3 in Vermont. The incidence of this species was not previously described. Our survey noted at least 10 clumps of *Carex folliculata*, located mostly along the "ditch" portion of the old fence line (roughly the southwestern half), marked as Trail 5 on the attached map.

Carex folliculata grows in large clumps; individual stems can be up to 1 m long. Its pistillate (female) spikelets are roundish with a diameter of 1.5-3 cm and individual perigynia

(ovaries) arranged in a spreading pattern. The plant is typically found in the acidic habitats of sphagnum bogs and swampy woods. Its range extends from Newfoundland and Quebec to Wisconsin and south to Florida and Louisiana (Gleason and Cronquist, 1992).



Carex folliculata
spikelet

D. Natural Communities at MCRMW

There are two natural communities present at the MCRMW site. While the mix of tree species that make up the canopy (especially white pine, red oak, and red maple) is quite similar across the entire site, several other factors, such as soil characteristics, microtopography, and herbaceous species, clearly distinguish an upland community in the northern portion of the site and a wetland community in its southern portion.

1. White Pine-Red Oak-Black Oak Forest



Multi-trunked red oak
with some stems of
50+ dbh

This community characterizes the northern portion of the site. The canopy is primarily composed of white pine (*Pinus strobus*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), and black oak (*Quercus velutina*) with smaller components of white oak, paper birch (*Betula papyrifera*), poplar (*Populus sp.*), beech (*Fagus grandifolia*) and pitch pine (*Pinus rigida*). The eastern portion of the upland community is also where most of the black gum (*Nyssa sylvatica*) occurs, though three individuals were observed in the wetland portion. The black gum in the upland portion grows in a low spot where the soil shows some gleying (a sign of waterlogging), but no other obvious qualities of a wetland. Overall, there is a good representation of different age

and size classes of the major tree species in most of the upland portion (with some of the larger trees at 50+ cm dbh), though some areas are characterized by early successional growth (for example, along the northeastern portion of the old fence line near the intersection with the trail that runs perpendicular to it). There is active regeneration of the major tree species in this community, including black gum.

The shrub layer is composed of witch hazel (*Hamamelis virginiana*), shadbush (*Amelanchier sp.*), and other tall shrubs, and low shrubs of the heath family such as mountain laurel and sheep laurel (*Kalmia latifolia* and *angustifolia*, respectively). The most common herbaceous plants in the upland portion are Canada mayflower (*Maianthemum canadense*), wild sarsaparilla (*Aralia nudicaulis*), Indian cucumber-root (*Medeola virginiana*), and starflower (*Trientalis borealis*). There are also pockets of pink lady's slipper (*Cypripedium acaule*) and fringed polygala (*Polygala paucifolia*).



Medeola virginiana (Indian cucumber-root)

2. Sandplain Swamp Variant of the Red Maple-Sphagnum Acidic Basin Swamp



The wetland portion of the combined parcels that make up the MCRMW has been identified as the rare Sandplain Variant of the Red Maple-Sphagnum Acidic Basin Swamp. This variant occurs on only a few locations on poorly drained sandy soils in Chittenden County and northern Addison County (Sorenson et al., 2004). Parts of the area had up to 10 inches of standing water even into August, though the remainder of the wetland is clearly recognizable as such by the waterlogged soils, the thick cover of cinnamon fern (*Osmunda cinnamomea* – approximately 80%), and the well-developed hummock-and-hollow topography. The tree canopy in this portion of the site is dominated by red maple, though the presence of upland species on the hummocks (especially white pine, red oak, and black oak, as well as some pitch pine and spruce) makes the canopy appear to blend in with the adjacent White Pine-Red Oak-Black Oak community. Presence of pitch pine at the site may hint at



Pitch Pine
(*Pinus rigida*)

fire in the past. This could also explain the many coppiced (multi-trunked) red maples and a small piece of charcoal in one soil probe¹.

The shrub layer in the wetland portion is



Flowering highbush
blueberry
(*Vaccinium corymbosum*)

composed primarily of highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), mountain holly (*Nemopanthes mucronata*), and chokeberry (*Aronia melanocarpa*). The herbaceous layer is dominated by cinnamon fern (*Osmunda cinnamomea*), and also includes royal fern (*Osmunda regalis*), several species of Sphagnum and other moss species, as well as several species of sedge, including the rare yellow bartonia (*Bartonia virginica*; S2) and the somewhat rare (S3) long sedge (*Carex folliculata*). The hummocks also support many of the herbaceous species that occur in the upland portion of the site.

As in the upland portion, the wetland portion of the site also exhibits a mixed age structure. Some of the larger trees reach upwards of 50 cm dbh.

E. Recommendations for trail siting

1. Keep the existing Trail 1 as it currently is, but consider installing a wooden walkway across its beginning section (near the entrance from Franklin Square).
2. Close the wetland portion of Trail 5 and install a wooden platform with interpretive signage overlooking the edge of the wetland.
3. Build a connector from its northeastern terminus to the point where Trail 7 crosses the wetland boundary (the trail should be outside the wetland boundary). Close the portion of Trail 4 in the wetland, or construct a wooden walkway with railings and interpretive signs.
4. Avoid building new trails in the eastern portion of the wetland. This is where most of the *Bartonia virginica* occurs. It is also the least accessible portion of the site due to the standing water over much of the summer season.
5. Either close Trail 3 or install wooden walkways to traverse its wetland portions. If the latter is done, consider connecting the two ends of the currently open loop. In either case, close off the spur trail that leads east off the loop.
6. Close the spur trail that leads from Trail 4 to the Venus Ave extension.

¹ Multi-trunking also frequently occurs after logging, which was certainly a factor in the land-use history of the site.

E. **Amendments to the MCRMW management plan**

Section titled "Resources of the MCRMW", subsection "Natural Communities",
Large Whorled Pogonia (Isotria verticillata)

Amend paragraph 3 to say that *Isotria verticillata* was not found in 2005.

Yellow Bartonia (Bartonia virginica)

Amend this section to say that Bartonia was found on nine hummocks in 2005.

Black Gum (Nyssa sylvatica)

Amend this section to say that *Nyssa sylvatica* is in fact regenerating and that several young individuals were noted in 2005.

F. References

- Coven, L. and J. Severson (2005): Mount Calvary Red Maple Wetland. A Burlington Natural Area Management Plan
- Correll, D. S. 1950: Native orchids of North America north of Mexico. Stanford Univ. Press, Stanford, CA. 399pp.
- Gleason, H.A. and A. Cronquist (1992): Manual of Vascular Plants of Northeastern United States and Adjacent Canada. Second Edition. The New York Botanical Garden, Bronx, New York.
- Magee, D.W. and H.E. Ahles (1999): Flora of the Northeast : a manual of the vascular flora of New England and adjacent New York. Amherst : University of Massachusetts Press
- Parsons, J. and E. Thompson (1988): Inventory of Burlington, VT, Wetlands
- Pennsylvania State University, Department of Biology (2005): Taxonomy of Seed Plants. <http://courses.bio.psu.edu/bio414/>
- Sorenson, Eric, Robert Popp, Michael Lew-Smith, Brett Engstrom, Marc Lapin, and Mark Ferguson (2004): Hardwood Swamps of Vermont: Distribution, Ecology, Classification, and Some Sites of Ecological Significance. Nongame and Natural Heritage Program, Vermont Department of Fish and Wildlife. 332 pp.
- Sperduto, M. (1998): Unpublished report of recovery coordinator for the small whorled pogonia, *Isotria medeoloides*. U. S. Fish and Wildlife Service, Concord, NH.
- Thompson, E., and E. Sorenson (2000): Wetland, Woodland, Wildland. A Guide to the Natural Communities of Vermont. Hanover, University Press of New England.
- U.S.D.A. Forest Service (1990): Silvics of North America. Volume 2, Agriculture Handbook 654. Washington, D.C.

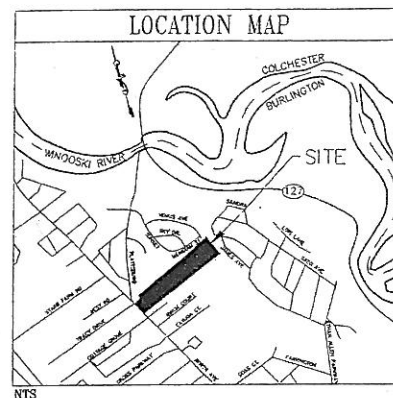
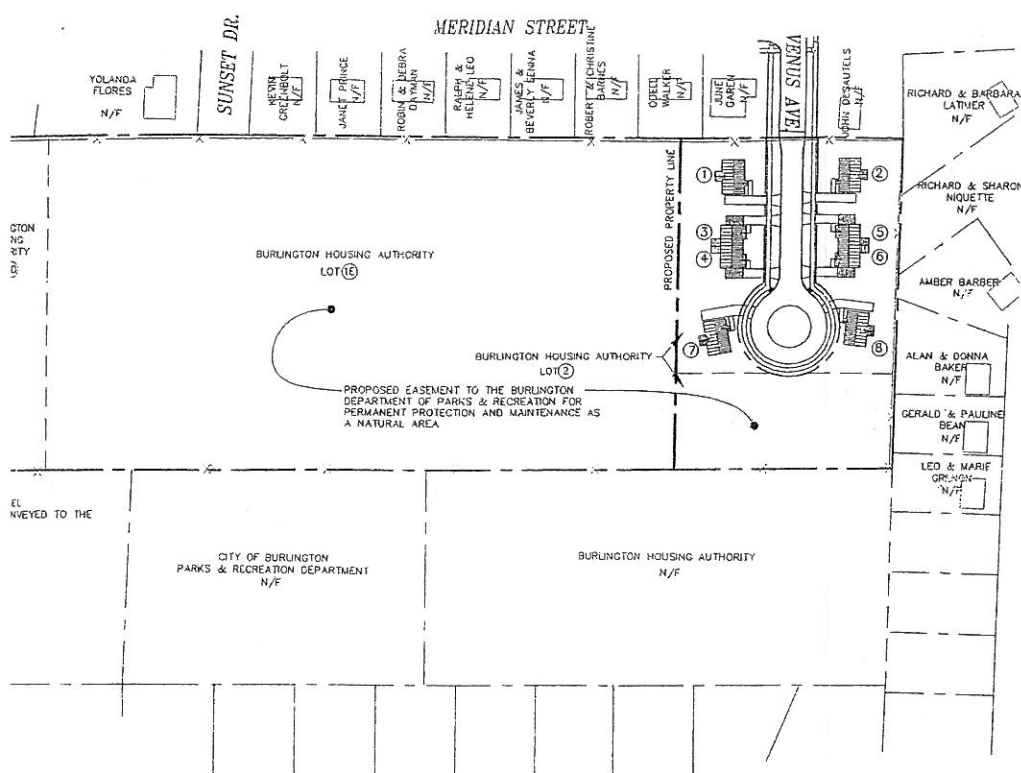
**Mt. Calvary Red Maple Natural Area
Draft Management Review
Public Meeting
Tuesday March 29th**

AGENDA

- I. Introductions**
 - a. Bob Whalen and Lisa Coven, City of Burlington, Department of Parks & Recreation, Conservation Legacy Program
- II. Scope of Management Plan**
 - a. Purpose
 - b. Property Included
- III. Background**
 - a. Acquisition history
 - b. Responsibilities
- IV. Existing Conditions**
 - a. Trails
 - b. Structures
 - c. Trash
- V. Proposed recommendations**
 - a. Signage
 - b. Public Access
 - c. Trail system
 - d. Public Education
 - e. Friends Group
- VI. Public Comment**
 - a. Feedback and input
 - b. Questions
- VII Wrap Up**
 - a. Final Draft - Conservation Legacy Program Committee – 4/4
Conservation Board – 4/4
Burlington Housing Authority – 4/15
Parks & Recreation Commission – 4/26
 - b. Continued contacts
Lisa Coven, 863-0420, email – lcoven@ci.burlington.vt.us
Bob Whalen, 865-7248, email – rwhalen@ci.burlington.vt.us

AVENUE RESIDENTIAL DEVELOPMENT

AVENUE
N, VERMONT



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UTILITIES PLAN	1
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Bartonia virginica

Yellow Bartonía

EO Number: 11

Survey Site

MOUNT CALVARY SWAMP

BURLINGTON

Chittenden (VT)

Directions The swamp adjacent to and southeast of Calvary Cemetery and is on the north side of Route 127. 20 feet from wet road.

General Description Young, disturbed red maple swamp with a tall shrub and herb layer. Higher land in the swamp has sandplain vegetation.
1999: Growing on 2 dm high hummock at base of two-trunked red maple in plot, in full shade of canopy. Hummock seems to be moist organic duff.

Survey Date 1999-07-08

Last Observation Date 1999-07-08

First Observation Date 1988

EO Data 1999: Ten 10-20 centimeter tall stems of presumably one plant in one area, and another six stems in 0.02 m² area nearby. 1988: 5-10 of previous year's stems were seen, growing on a hummock at the base of a tree. The site was not visited in late summer. The normal emergence/flowering time for this annual.

Isotria verticillata

Large Whorled Pogonia

EO Number: 4

Survey Site

MOUNT CALVARY SWAMP

BURLINGTON

Chittenden (VT)

Directions The swamp adjacent to and southeast of Calvary Cemetery and is on the north side of Route 127. The population is 50 yards from a path.

General Description Fairly open oak-pine woods surrounded by red maple swamp.

Survey Date 2001-06-07

Last Observation Date 1988-06-02

First Observation Date 1988

EO Data 2001: Plants not found after survey of swamp, the vegetation is high and thick in many areas so plants could be overlooked. There are several areas of suitable habitat. 1999: A survey of the red maple swamp did not reveal *Isotria*, but it was not searched for specifically. 1988: 100-200 plants seen in a small, restricted area, on an upland island in the swamp. Circa 50 plants in flower, with a few of last years fruits visible.

Nyssa sylvatica

Black Gum or Tupelo

EO Number: 14

Survey Site

MOUNT CALVARY SWAMP

BURLINGTON

Chittenden (VT)

Directions The swamp adjacent to and southeast of Calvary Cemetery and on the north side of Route 127.

General Description Young, disturbed red maple swamp with tall herb and shrub layer. The substrate is wet sand. The higher ground in the swamp has sandplain vegetation.

Survey Date 2001-06-07 **Last Observation Date** 2001-06-07 **First Observation Date** 1988

EO Data 2001: Twelve trees located in east corner of swamp. 1999: A single 5.3 cm dbh, 5 m tall individual in releve. No others observed, though searched for. Plant with immature (green) fruit. 1988: At least 15 trees present in east corner of the swamp, at the edge of woods. Associated with *Tsuga*, *Acer rubrum* and *Betula papyrifera*. Trees all relatively small: <8" dbh.

Significant Hardwood Swamps Of Vermont
Vermont Nongame and Natural Heritage Program, 2004

SITE NAME: Mount Calvary Cemetery Swamp

TOWN: Burlington

MAPS: Colchester Point & Colchester, VT-NH 7.5 minute USGS quadrangles

LOCATION: East of Mount Calvary Cemetery in Burlington's new North End.

SOURCE OF INFORMATION: The Identification and characterization of Burlington, Vermont's wetlands and significant natural areas, with recommendations for management (Parsons et al. 1988); Mount Calvary Red Maple Swamp: A Conservation Plan, Neitlich et al. 1992; NNNHP files; 1999 inventory field survey (B. Engstrom, 7/8)

OWNERSHIP: There are multiple landowners at the site. A portion of the site is owned by the city of Burlington and the rest is privately owned (no access without landowner permission).

SIGNIFICANCE:

1. The site contains a C-ranked, but significant example of the rare Sandplain Swamp Variant of Red Maple-Sphagnum Acidic Basin Swamp.
2. Two rare plants in Vermont, large whorled pogonia (*Isotria verticillata*), and yellow bartonia (*Bartonia virginica*), occur here. The former is a state-threatened species and was last seen at the site in 1988.
3. Two uncommon/rare plants in Vermont, black gum (*Nyssa sylvatica*) and long sedge (*Carex folliculata*), also occur here.

DESCRIPTION OF SITE:

Mount Calvary Cemetery Swamp in one of only two known examples of the rare Sandplain Swamp Variant of Red Maple-Sphagnum Acidic Basin Swamp in Burlington, and only one of four examples of this rare community variant documented statewide. These swamps are only seasonally saturated at the surface and contain only small pockets of standing water for short periods in the spring and possibly fall.

Highbush blueberry (*Vaccinium corymbosum*) shrubs laden with ripe fruit; gangly chokeberry (*Prunus virginiana*), mountain-holly (*Nemopanthis mucronata*), and winterberry (*Ilex verticillata*) standing twice my height; and yellow bartonia (*Bartonia virginica*), skunk cabbage (*Symplocarpus foetidus*), pitch pine (*Pinus rigida*) and black gum (*Nyssa sylvatica*) sprinkled in a red maple swamp.

These woods are a different type of hardwood swamp in Vermont. In the spectrum of swamps, it lies almost off the scale. Most of the forest is a moist version of sandplain forest, although it is technically wetland. It has black (*Quercus velutina*) and red oaks (*Q. rubra*), red maple (*Acer rubrum*), pitch pine (*Pinus rigida*) and some low heaths (*Vaccinium spp.*), as well as the usual array of common acidic forest herbs. However, the well-developed cinnamon fern (*Osmunda cinnamomea*) layer makes these woods different than the high and dry sandplain forest. Microtopography is well developed with 8 to 11 inches of relief and hummocks and hollows a few square yards each. Furthermore, the soil, though typical loamy sand, has a well-developed leached horizon, as in a spodosol, which the warmer, drier sandplain soils lacks. Mottling is found within 7 inches of the soil surface.

902 583

Received 1:14 2005, at 2:22 P.M.
and recorded in Vol. 902 on Page
of Burlington Land Records.
Vermont Property Transfer Tax 32 V.S.A. Chap. 231

-ACKNOWLEDGEMENT-
Return, Certificate & Payment Received

**GRANT OF DEVELOPMENT RIGHTS, CONSERVATION
RESTRICTIONS, and PUBLIC ACCESS EASEMENT**

Attest: *Jo LaMarche*
Jo LaMarche, Asst. City Clerk

KNOW ALL PERSONS BY THESE PRESENTS that **BURLINGTON HOUSING AUTHORITY**, a municipal housing authority organized under the laws of the State of Vermont with its principal offices located in Burlington, Vermont, on behalf of itself and its successors and assigns (hereinafter "Grantor"), pursuant to Title 10 V.S.A. Chapters 34 and 155 and in consideration of the payment of Ten Dollars and other valuable consideration paid to its full satisfaction, does freely give, grant, sell, convey and confirm unto the **CITY OF BURLINGTON, DEPARTMENT OF PARKS AND RECREATION**, a municipal corporation organized under the laws of the State of Vermont, with its principal offices in Burlington, Vermont, and the **VERMONT HOUSING AND CONSERVATION BOARD**, a public instrumentality of the State of Vermont with its offices in Montpelier, Vermont, and their respective successors and assigns (hereinafter "Grantees") tenants in common, forever, the development rights, perpetual conservation easement restrictions, public access easement, and right of entry (hereafter this "Grant") (all as more particularly set forth below) in certain tracts of land (hereinafter "Protected Property") situated in the City of Burlington, Chittenden County, State of Vermont, the Protected Property being more particularly described in Schedule A and Schedule B, attached hereto and incorporated herein.

The development rights hereby conveyed to Grantees shall include all development rights except those specifically reserved by Grantor herein and those reasonably required to carry out the permitted uses of the Protected Property as herein described. The development rights, perpetual conservation easement restrictions, public access easement, and right of entry hereby conveyed to Grantees consists of covenants on the part of Grantor to do or refrain from doing, severally and collectively, the various acts set forth below. It is hereby acknowledged that the development rights, perpetual conservation easement restrictions, public access easement, and right of entry shall constitute a servitude upon and shall run with the land.

I. Purposes of this Grant and Management Plan.

A. Statement of Purposes.

Grantor and Grantees acknowledge that the following primary and secondary Purposes shall apply to the Protected Property (hereinafter "Purposes of this Grant"):

1. As primary purposes, to conserve and protect biological diversity, wildlife habitat, natural communities, and native flora and fauna on the Protected Property, and the ecological processes that sustain these natural resource values as these values exist on the date of this instrument and as they may evolve in the future; and

2. As a secondary purpose, to foster non-commercial, recreational and educational use and utilization of the Protected Property which is compatible with the primary purpose while confining more intensive or concentrated recreational uses to identified recreational trails.

3. These purposes will be advanced by conserving the Protected Property because it possesses the following attributes:

- (a) locally significant wetlands habitat;
- (b) at least two rare plant species, one of which is listed on the Vermont state threatened list within a remnant section of wetlands habitat;
- (c) natural upland forest habitat that serves as a buffer to wetlands; part of the Mount Calvary Red Maple Swamp Conservation Area; and,

(Signature)

- (d) one of the last remaining natural areas within the City of Burlington.

Grantor and Grantees recognize the Purposes of this Grant and share the common purpose of conserving these values by the conveyance of conservation restrictions, and development rights, to prevent the use or development of the Protected Property for any purpose or in any manner which would conflict with the maintenance of the Purposes of this Grant. Grantees accept such conservation restrictions, development rights, and public access easement in order to conserve these values for present and future generations.

B. Management Plans.

Grantee City of Burlington shall from time to time and in collaboration with the City of Burlington Conservation Board develop comprehensive Management Plans for the Protected Property (hereinafter "Management Plans"). The Management Plans shall:

1. Provide for the use and management of the Protected Property in a fashion which is consistent with the Purposes of this Grant; and
2. Be designed to provide reasonable public access to recreational values and opportunities associated with the Protected Property; and,
3. Be consistent with the primary purpose of conserving and protecting biological diversity, wildlife habitat, natural communities, and native flora and fauna on the Protected Property, and the ecological processes that sustain these natural resource values as these values exist on the date of this instrument and as they may evolve in the future; and,
4. Otherwise be consistent with this Grant.

Prior to the final adoption of each Management Plan, Grantee City of Burlington shall: (a) secure appropriate public input from the general public; and (b) provide Grantor with a copy of each such Management Plan.

It is understood and agreed by Grantor and Grantees that upon execution of this Grant, Grantor agrees to leave the Protected Areas in their current, natural state and shall not make nor shall it be responsible to do any of the following at or in the Protected Property: a) make any improvements; b) provide any maintenance or repair; c) control public access, d) monitor implementation of the Management Plan or this Grant. All such rights, duties and obligations are hereby transferred by Grantor to the Grantee City of Burlington through implementation of the Management Plan. Nothing in this section is intended to limit the right of either Grantee to monitor the implementation of this Grant.

II. Restricted Uses of Protected Property Consistent with the Management Plan for the Protected Areas.

1. The Protected Property shall be used for habitat conservation, natural area, noncommercial, pedestrian recreation, open space and educational purposes only, except as otherwise specifically permitted under this Grant. No residential, commercial, industrial, or mining activities shall be permitted, and no building or structure, (including, but not limited to, telecommunication towers) shall be constructed, created, installed, erected or moved onto the Protected Property, except as permitted in Section III below and the Management Plans.

2. No rights-of-way, easements of ingress or egress, driveways, roads, or utility lines or easements shall be constructed, developed or maintained into, on, over, under, or across the Protected Property without the prior written permission of Grantees, which approval shall not be unreasonably withheld or conditioned if such use is consistent with the Purposes of this Grant.

3. There shall be no signs, billboards, or outdoor advertising of any kind erected or displayed on the Protected Property; provided, however, that Grantor may erect and maintain reasonable signs including but not limited to signs indicating the name of the Protected Property and its ownership by Grantor, boundary markers, directional signs, memorial plaques, informational and interpretive signs, and signs limiting access or use (subject to the limitations of Section IV, below). With prior written permission of Grantor, Grantees may erect and maintain signs designating the Protected Property as land under the protection of Grantees.

4. The placement, collection or storage of trash, human waste, or any other unsightly or offensive material on the Protected Property shall not be permitted except at locations, if any, and in manner which is consistent with this Grant and permitted by the Management Plans. The temporary storage of trash in receptacles for periodic off-site disposal shall be permitted.

5. There shall be no disturbance of the surface of the Protected Property, including, but not limited to, filling, excavation, removal of topsoil, sand, gravel, rocks or minerals, or change of the topography of the land in any manner, except as may be reasonably necessary to carry out the uses permitted on the Protected Property under the terms of this Grant. In no case shall surface mining of subsurface oil, gas, or other minerals be permitted.

6. Grantor shall not give, grant, sell, convey, subdivide, transfer, mortgage, pledge, lease or otherwise encumber the Protected Property without the prior written approval of Grantees, but it is understood and agreed by Grantees herein that: a) Lot 2 as shown and depicted on the Plat referenced in Schedule A (Property Description) is being developed as an 8 unit condominium (the "Condominium") under the Vermont Common Interest Ownership Act; b) the Protected Property described in Schedule A is part of the Common Elements of the Condominium and; c) each Unit Owner at the Condominium (the "Unit Owner(s)") will own an undivided 12.5% interest in the Protected Property described in Schedule A, subject to this Grant. No consent of or notice to the Grantees shall be required under this Grant with respect to any conveyance, mortgage, housing subsidy covenant or other security interest in any undivided interest in the Common Elements (a "Conveyance") of the Condominium, including the Protected Property described in Schedule A; provided that a) any such Conveyance take subject to this Grant and b) the conveyance reference this Grant, as provided in Section VI(5) of this Grant.

7. There shall be no operation of motorized or mechanized vehicles on the Protected Property except for uses specifically reserved in Section III below, such as wildlife and forest management, trail maintenance and for safety or emergency purposes.

8. There shall be no manipulation of natural watercourses, marshes, vernal pools, wetlands, or other water bodies, nor shall there be activities conducted on the Protected Property which would be detrimental to water purity, or which could alter natural water level or flow, except as reasonably necessary to carry out the uses permitted on the Protected Property under this Grant.

9. No use shall be made of the Protected Property, and no activity thereon shall be permitted which, in the reasonable opinion of Grantees, is not or is likely to not be consistent with the Purposes of this Grant.

III. Permitted Uses of the Protected Property.

Notwithstanding the foregoing, Grantor and Grantees agree that the in promulgating and implementing the Management Plan, Grantee City of Burlington shall make provision, as appropriate, for the following public uses and limitations on public use in connection with the Protected Property, all said uses and limitations on public use to be monitored, implemented or enforced, as applicable, by the City of Burlington:

1. The right to use the Protected Property for all types of public non-commercial, pedestrian recreational purposes (including, but not limited to, bird-watching, walking, snowshoeing and cross-country skiing) consistent with the Purposes of this Grant.

2. The right to use the Protected Property to conduct all activities allowed by the Management Plans, provided that such activities are reasonably necessary to carry out the Purposes of the Grant and are consistent with this Grant. This paragraph III(2) shall not be construed to authorize the construction of new structures that are not otherwise specifically permitted by this Grant.

3. After consultation with the Nongame and Natural Heritage Program of the Vermont Department of Fish and Wildlife, the right to maintain, repair, improve and replace existing recreational trails, together with the right to clear, construct, repair, improve, maintain and replace new trails, provided that the construction, maintenance, location and use of all trails are consistent with the Purposes of this Grant and are provided for in the Management Plans.

4. The right to install and maintain fencing to manage pedestrian and vehicular access to the Protected Property consistent with the Management Plans.

5. The right of the City of Burlington to charge members of the public reasonable fees for admission to and use of the Protected Property, provided that such fees are collected only for community and public recreation, education or entertainment events on the Protected Property (including, without limitation, children's activities, concerts, fairs and celebrations) or such fees are reasonably necessary to support the Protected Property. The right to charge organizations reasonable fees for recreational use of a portion of the Protected Property provided that such use does not unreasonably interfere with the access of the general public to the Protected Property. Fees shall not be based on place of residency. All fees charged for admission to or use of the Protected Property shall be consistent with the Purposes of this Grant, especially that of public access, and shall be provided for in the Management Plans.

6. The right to issue temporary special use permits or licenses authorizing the commercial or non-commercial use of the Protected Property for recreational, educational, or research purposes, provided that any such permit or license (i) does not unreasonably interfere with the access of the general public to the Protected Property, (ii) is for uses consistent with the Purposes of this Grant, and (iii) authorizes only uses of or actions on the Protected Property consistent with Sections II, III and IV of this Grant.

IV. Public Access.

Grantor and Grantees covenant and agree that the Protected Property shall be available to the general public for all types of dispersed, pedestrian recreational purposes (including, but not limited to, bird-watching, walking, snowshoeing and cross-country skiing) consistent with the Purposes of this Grant. Notwithstanding the foregoing, Grantee City of Burlington through its Management Plan or implementation of the Management Plan may limit or restrict public access to the Protected Property to assure compliance with the requirements of this Grant, to protect natural habitats, to protect the public health or safety (including, but not limited to, the right to permit, regulate or prohibit hunting). Grantor reserves the right to limit or restrict nighttime public access to the Protected Property to promote the quiet enjoyment of persons living in nearby residential areas. If Grantees approve a conveyance of the Protected Property, then Grantees may also require that a separate Grant of Public Access Easement also be conveyed to Grantees in a form approved by Grantees. Notwithstanding the foregoing, no separate Grant of Public Access Easement shall be required with respect to any conveyance of an undivided interest in the Protected Property identified in Schedule A in connection with the Condominium. All such conveyances shall be subject to this Grant.

V. Enforcement of the Restrictions.

Grantees shall make reasonable efforts from time to time to assure compliance by Grantor and members of the public with all of the covenants and restrictions herein. In connection with such efforts, Grantees may make periodic inspection of all or any portion of the Protected Property and for such inspection and enforcement purposes, Grantees shall have the right of reasonable access to the Protected Property. In the event that Grantees becomes aware of an event or circumstance of non-compliance by Grantor with the terms and conditions herein set forth, Grantees shall give notice to Grantor (including, in each such case, Grantor Burlington Housing Authority) of such event or circumstance of non-compliance via personal service or certified mail, return receipt requested, and demand corrective action by Grantor sufficient to abate such event or circumstance of noncompliance and restore the Protected Property to its previous condition. In the event there has been an event or circumstance of non-compliance which is corrected through negotiation and voluntary compliance, Grantor shall reimburse Grantees all reasonable costs incurred in investigating the noncompliance and in securing its correction.

Failure by Grantor to cause discontinuance, abatement or such other corrective action which are the result of the affirmative acts of the Grantor as may be demanded by Grantees within a reasonable time after receipt of notice and reasonable opportunity to take corrective action shall entitle Grantees to bring an action in a court of competent jurisdiction to enforce the terms of this Grant and to recover any damages arising from such noncompliance. Such damages, when recovered, may be applied by Grantees to corrective action on the Protected Property, if necessary. If the court determines that Grantor has failed to comply with this Grant, Grantor shall reimburse Grantees for any reasonable costs of enforcement, including court costs and reasonable attorneys' fees, in addition to any other payments ordered by such court. In the event that Grantees initiate litigation and the court determines that Grantor has not failed to comply with this Grant and that Grantees have initiated litigation without reasonable cause or in bad faith, then Grantees shall reimburse Grantor for any reasonable costs of defending such action, including court costs and reasonable attorneys' fees. The parties to this Grant specifically acknowledge that events and circumstances of non-compliance constitute immediate and irreparable injury, loss and damage to the Protected Property and accordingly entitle Grantees to such equitable relief, including but not limited to injunctive relief, as the Court deems just.

The remedies described herein are in addition to, and not in limitation of, any other remedies available to Grantees at law, in equity, or through administrative proceedings. No delay or omission by Grantees in the exercise of any right or remedy upon any breach of Grantor shall impair Grantees' rights or remedies or be construed as a waiver. Nothing in this enforcement section shall be construed as imposing a liability upon a prior owner of the Protected Property, when the event or circumstance of non-compliance occurred after said prior owner's ownership or control of the Protected Property, or any portion of or interest in the Protected Property, has terminated.

Notwithstanding the foregoing provisions of this Section V, in the event of violations of the Management Plan or of the terms of this Grant by members of the public or by anyone other than the Grantor, its successors or assigns, Grantees agree that they shall not involve the Grantor, or its successors or assigns in any enforcement action.

VI. Miscellaneous Provisions with Respect to the Protected Property.

1. Where Grantor is required, as a result of this Grant, to obtain the prior written approval of Grantees before commencing an activity or act, and where Grantees have designated in writing another organization or entity which shall have the authority to grant such approval, the approval of said designee shall be deemed to be the approval of Grantees, provided that Grantor has given its written consent to such designation, which consent shall not be unreasonably withheld. Grantor shall reimburse Grantees or Grantees' designee for all extraordinary costs, including staff time, incurred in reviewing

the proposed action requiring Grantees' approval; but not to include those costs which are expected and routine in scope. When Grantees have authorized a proposed action requiring approval under this Grant, Grantees shall, upon request, provide Grantor with a written certification in recordable form memorializing said approval.

2. It is hereby agreed that the construction of any buildings, structures or improvements, or any use of the land otherwise permitted under this Grant, shall be in accordance with all applicable ordinances, statutes and regulations of the City of Burlington and the State of Vermont.

3. Grantees shall transfer the development rights and conservation easement and restrictions conveyed by Grantor herein only to a State agency, municipality, or qualified organization, as defined in Chapter 34 or Chapter 155 Title 10 V.S.A., in accordance with the laws of the State of Vermont and the regulations established by the Internal Revenue Service governing such transfers.

4. In the event the development rights or conservation restrictions conveyed to Grantees herein are extinguished by eminent domain or other legal proceedings, Grantees shall be entitled to any proceeds which pertain to the extinguishment of Grantees' rights and interests. Any proceeds from extinguishment shall be allocated between Grantor and Grantees using a ratio based upon the relative value of the development rights and conservation restrictions, and the value of the fee interest in the Protected Property, as determined by a qualified appraisal performed at the direction of either Grantor or Grantees in the year of this conveyance. Grantees shall use any such proceeds to preserve undeveloped and open space land in order to protect the aesthetic, cultural, educational, scientific, and natural resources of the state through nonregulatory means.

5. In any deed or lease conveying an interest in all or part of the Protected Property, Grantor shall make reference to the conservation easement, restrictions, and obligations described herein and shall indicate that this easement and restrictions are binding upon all successors in interest in the Protected Property in perpetuity. With respect to the Protected Property described in Schedule B only, Grantor shall also notify Grantees of the name(s) and addressees of Grantor's successor(s) in interest.

6. Grantees shall be entitled to record this Grant, or to record a notice making reference to the existence of this Grant, in the City of Burlington Land Records as may be necessary to satisfy the requirements of the Record Marketable Title Act, 27 V.S.A. Chapter 5, Subchapter 7, including 27 V.S.A. §§ 603 and 605.

7. While title is herein conveyed to Grantees as tenants in common, the rights and interests described in this Grant, including enforcement of the conservation easement and restrictions, may be exercised by Grantees collectively, or by any single Grantee individually, provided that court enforcement action by a single Grantee shall foreclose action on the same issue(s) by the other Grantee(s) who shall be bound by the final determination.

8. The term "Grantor" shall include the successors and assigns of the original Grantor, Burlington Housing Authority ("BHA"). Upon conveyance to it of an undivided one-half interest in Lot 2, as described in Schedule A, Green Mountain Habitat for Humanity, Inc. ("Habitat") as well BHA shall be considered the Grantor under this Grant with respect to the Protected Property listed in Schedule A. Without modification of any other legal ownership rights with respect to the Condominium, BHA and Habitat shall be deemed responsible for implementing the rights and responsibilities of the Grantor under this Grant with respect to the Protected Property listed in Schedule A for the period from: a) the conveyance of an undivided interest in Lot 2 as described in Schedule A to Habitat until the issuance of a final certificate of occupancy by the City of Burlington for the Condominium and b) for the three year period commencing with the date of issuance of the final certificate of occupancy by the City of Burlington for the Condominium. Thereafter, the Owners' Association at the Condominium shall be responsible for

administering the Grantor's rights and responsibilities on behalf of the Unit Owners at the Condominium. The previous sentence is intended solely to facilitate the administrative implementation of this Grant and is not intended to modify any legal arrangements concerning the Condominium. The term "Grantees" shall include the respective successors and assigns of the original Grantees, City of Burlington Department of Parks and Recreation and Vermont Housing and Conservation Board.

9. Any signs erected on the Protected Property which mention funding sources shall include the Vermont Housing and Conservation Board.

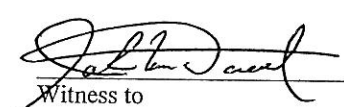
10. Nothing in this Grant is intended to or shall be deemed to impair the fee simple ownership of the Grantor, its successors or assigns in and to the Protected Property, subject only to the rights provided to the Grantees under this Grant.

INVALIDATION of any provision hereof shall not affect any other provision of this Grant.

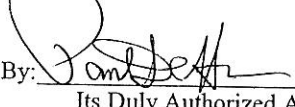
TO HAVE AND TO HOLD said granted development rights and conservation easement and restrictions, and executory interest, with all the privileges and appurtenances thereof, to the said Grantees, VERMONT HOUSING AND CONSERVATION BOARD, and CITY OF BURLINGTON DEPARTMENT OF PARKS AND RECREATION, their respective successors and assigns, to their own use and behoof forever, and the said Grantor, BURLINGTON HOUSING AUTHORITY, on behalf of itself and its successors and assigns, does covenant with the said Grantees, their successors and assigns, that until the ensealing of these presents, it is the sole owner of the premises and has good right and title to convey the same in the manner aforesaid, that the premises are free from every encumbrance, but is subject to the permits listed in Schedule C attached hereto and incorporated herein, and it hereby engages to warrant and defend the same against all lawful claims whatever.

IN WITNESS WHEREOF, Paul Dettman, duly authorized agent of the BURLINGTON HOUSING AUTHORITY, has executed this Grant on this 21st day of October 2004.

IN THE PRESENCE OF:

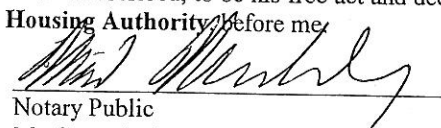

Witness to

BURLINGTON HOUSING AUTHORITY

By: 
Its Duly Authorized Agent

STATE OF VERMONT
COUNTY OF CHITTENDEN, SS.

At Burlington, Vermont, on this 21st day of October, 2004, personally appeared Paul Dettman, duly authorized agent of the **Burlington Housing Authority**, and he acknowledged this instrument, by him sealed and subscribed, to be his free act and deed, and the free act and deed of the **Burlington Housing Authority** before me.


Notary Public
My Commission Expires: 2/10/07

Approved by:

Date 12/15/04

VERMONT HOUSING AND CONSERVATION
BOARD:

By: [Signature]
Its Duly Authorized Agent

Approved by:

Date 12/6/04

CITY OF BURLINGTON, DEPARTMENT OF
PARKS & RECREATION:

By: Wayne E. Goss
Its Duly Authorized Agent

902 591

SCHEDULE A

Being a portion of the lands owned by the Burlington Housing Authority, said lands lying easterly of North Avenue in the City of Burlington, County of Chittenden and State of Vermont and more particularly described as follows:

A parcel of land consisting of 0.6 acres and being that portion of Lot 2 identified as "Proposed 0.6 Ac. Easement to the Burlington Department of Parks & Recreation for Permanent Protection and Maintenance as a Natural Area" on a Plat dated December 20, 2000 entitled "Lands of Burlington Housing Authority, North Avenue, Burlington, Vermont, Property Plat, prepared by Lamoureux & Dickinson Consulting Engineers, Inc. and recorded in the Land Records of the City of Burlington (hereafter the "Plat") at Plat Hanger 347-D.

The above described land is a portion of the lands shown on a Plan entitled "Plan of Land to be Conveyed to the Burlington Housing Authority, Low Income Family Housing Project VT", 1-3, North Avenue Burlington, Vermont, dated May, 1968 prepared by Fred Koerner, C.E. and recorded in Volume 188, Page 165 of the Land Records of the City of Burlington.

902 592

SCHEDULE B

A portion of the lands owned by the Burlington Housing Authority, said lands lying easterly of North Avenue in the City of Burlington, County of Chittenden and State of Vermont and more particularly described as follows:

A parcel of land consisting of 6.6 acres and identified as "Lot 1E, Burlington Housing Authority, Proposed 6.6 Ac. Easement to the Burlington Department of Parks & Recreation for Permanent Protection and Maintenance as a Natural Area" on a Plat dated December 20, 2000 entitled "Lands of Burlington Housing Authority, North Avenue, Burlington, Vermont, Property Plat, prepared by Lamoureux & Dickinson Consulting Engineers, Inc. and recorded in the Land Records of the City of Burlington (hereafter the "Plat") at Plat Hanger 347-D.

The aforesaid Lot 1E is a portion of the lands owned by the Burlington Housing Authority as shown on a Plan entitled "Plan of Land to be Conveyed to the Burlington Housing Authority, Low Income Family Housing Project VT", 1-3, North Avenue Burlington, Vermont, dated May, 1968 prepared by Fred Koerner, C.E. and recorded in Volume 188, Page 165 of the Land Records of the City of Burlington.

902 593

ATTACHMENT C

PERMITS AND APPROVALS

Zoning Order dated August 1, 2003, Vermont Environmental Court Docket Nos. 42-3--1 Vtec and 218 -9-00 Vtec

Approval of Burlington Development Review Board dated February 20, 2001

Approval by United States Department of Housing and Urban Development of Disposition of 2.37 acres and easement of 7.3 acres at Franklin Square Apts dated November 6, 2000.

Subdivision Permit Case No. EC-4-2424 dated June 25, 2002

Wastewater Supply and Wastewater Disposal Permit, Case No. WW-4-1582 dated June 25, 2002.

Public Water System Permit to Construct, Project # E1253 WSID #5053 PIN # EJ01-0265.02 dated April 16, 2002 , renewed May 14, 2004.

Land Use Permit, Case No. 4C1131 dated March 31, 2004

**GRANT OF DEVELOPMENT RIGHTS, CONSERVATION RESTRICTIONS
 and PUBLIC ACCESS EASEMENT**

Attest:

J. Ramarche
 Clerk

KNOW ALL PERSONS BY THESE PRESENTS that **the BURLINGTON HOUSING AUTHORITY** a municipal housing authority organized under the laws of the State of Vermont, with its principal offices in Burlington, Vermont, on behalf of itself and its successors and assigns (hereinafter "Grantor"), pursuant to Title 10 V.S.A. Chapters 34 and 155 and in consideration of the payment of Ten Dollars and other valuable consideration paid to its full satisfaction, does freely give, grant, sell, convey and confirm unto the **CITY OF BURLINGTON, DEPARTMENT OF PARKS AND RECREATION**, a municipal corporation organized under the laws of the State of Vermont with its principal office in Burlington, Vermont, and its successors and assigns (hereinafter "Grantee") forever, the development rights, perpetual conservation easement restrictions, public access easement, and right of entry (all as more particularly set forth below) in a certain tract of land (hereinafter "Protected Property") situated in the City of Burlington, Chittenden County, State of Vermont, the Protected Property being more particularly described in Schedule A, attached hereto and incorporated herein.

The development rights hereby conveyed to Grantee shall include all development rights except those specifically reserved by Grantor herein and those reasonably required to carry out the permitted uses of the Protected Property as herein described. The development rights, perpetual conservation easement restrictions, public access easement, and right of entry hereby conveyed to Grantee consists of covenants on the part of Grantor to do or refrain from doing, severally and collectively, the various acts set forth below. It is hereby acknowledged that the development rights, perpetual conservation easement restrictions, public access easement, and right of entry shall constitute a servitude upon and shall run with the land.

I. Purposes of this Grant and Management Plan.

A. Statement of Purposes.

Grantor and Grantee acknowledge that the following primary and secondary Purposes shall apply to the Protected Property (hereinafter "Purposes of this Grant"):

1. As primary purposes, to conserve and protect biological diversity, wildlife habitat, natural communities, and native flora and fauna on the Protected Property, and the ecological processes that sustain these natural resource values as these values exist on the date of this instrument and as they may evolve in the future; and

2. As a secondary purpose, to foster non-commercial, recreational and educational use and utilization of the Protected Property which is compatible with the primary purpose while confining more intensive or concentrated recreational uses to identified recreational trails.

3. These purposes will be advanced by conserving the Protected Property because it possesses or may possess the following attributes:

- (a) locally significant wetlands habitat
- (b) at least two rare plant species, one of which is listed on the Vermont state threatened list within a remnant section of wetlands habitat;
- (c) natural upland forest habitat that serves as a buffer to wetlands; part of the Mount Calvary Red Maple Swamp Conservation Area; and,
- (d) one of the last remaining natural areas within the City of Burlington.

Grantor and Grantee recognize the Purposes of this Grant and share the common purpose of conserving these values by the conveyance of conservation restrictions, and development rights, to prevent the use or development of the Protected Property for any purpose or in any manner which would conflict with the maintenance of the Purposes of

(Signature)

this Grant. Grantee accepts such conservation restrictions, development rights, and public access easement in order to conserve these values for present and future generations.

B. Management Plans.

Grantee shall from time-to-time and in collaboration with the City of Burlington Conservation Board develop comprehensive Management Plans for the Protected Property (hereinafter "Management Plans"). The Management Plans shall:

1. Provide for the use and management of the Protected Property in a fashion which is consistent with the Purposes of this Grant; and
2. Be designed to provide reasonable public access to recreational values and opportunities associated with the Protected Property; and,
3. Be consistent with the primary purpose of conserving and protecting biological diversity, wildlife habitat, natural communities, and native flora and fauna on the Protected Property, and the ecological processes that sustain these natural resource values as these values exist on the date of this instrument and as they may evolve in the future; and,
4. Otherwise be consistent with this Grant.

Prior to the final adoption of each Management Plan, Grantee shall: (a) secure appropriate public input from the general public; and (b) provide Grantor with a copy of each such Management Plan.

It is understood and agreed by Grantor and Grantee that upon execution of this Grant, Grantor agrees to leave the Protected Area in its current, natural state and shall not make nor shall it be responsible to do any of the following at or in the Protected Property: a) make any improvements; b) provide any maintenance or repair; c) control public access, d) monitor implementation of the Management Plan or this Grant. All such rights, duties and obligations are hereby transferred by Grantor to the Grantee City of Burlington through implementation of the Management Plan. Nothing in this section is intended to limit the right of Grantee to monitor the implementation of this Grant.

II. Restricted Uses of Protected Property.

1. The Protected Property shall be used for habitat conservation, natural area, noncommercial, pedestrian recreation, open space and educational purposes only, except as otherwise specifically permitted under this Grant. No residential, commercial, industrial, or mining activities shall be permitted, and no building or structure, (including, but not limited to, telecommunication towers) shall be constructed, created, installed, erected or moved onto the Protected Property, except as permitted in Section III below and the Management Plans.

2. No rights-of-way, easements of ingress or egress, driveways, roads, or utility lines or easements shall be constructed, developed or maintained into, on, over, under, or across the Protected Property without the prior written permission of Grantee, which approval shall not be unreasonably withheld or conditioned if such use is consistent with the Purposes of this Grant.

3. There shall be no signs, billboards, or outdoor advertising of any kind erected or displayed on the Protected Property; provided, however, that Grantor may erect and maintain reasonable signs, including but not limited, to signs indicating the name of the Protected Property and its ownership by Grantor, boundary markers, directional signs, memorial plaques, informational and interpretive signs, and signs limiting access or use (subject to the limitations of Section IV, below). With prior written

permission of Grantor, Grantee may erect and maintain signs designating the Protected Property as land under the protection of Grantee.

4. The placement, collection or storage of trash, human waste, or any other unsightly or offensive material on the Protected Property shall not be permitted except at locations, if any, and in manner which is consistent with this Grant and permitted by the Management Plans. The temporary storage of trash in receptacles for periodic off-site disposal shall be permitted.

5. There shall be no disturbance of the surface of the Protected Property, including, but not limited to, filling, excavation, removal of topsoil, sand, gravel, rocks or minerals, or change of the topography of the land in any manner, except as may be reasonably necessary to carry out the uses permitted on the Protected Property under the terms of this Grant. In no case shall surface mining of subsurface oil, gas, or other minerals be permitted.

6. Grantor shall not give, grant, sell, convey, subdivide, transfer, mortgage, pledge, lease or otherwise encumber the Protected Property without the prior written approval of Grantee.

7. There shall be no operation of motorized or mechanized vehicles on the Protected Property except for uses specifically reserved in Section III below, such as wildlife and forest management, trail maintenance and for safety or emergency purposes.

8. There shall be no manipulation of natural watercourses, marshes, vernal pools, wetlands, or other water bodies, nor shall there be activities conducted on the Protected Property which would be detrimental to water purity, or which could alter natural water level or flow, except as reasonably necessary to carry out the uses permitted on the Protected Property under this Grant.

9. No use shall be made of the Protected Property, and no activity thereon shall be permitted which, in the reasonable opinion of Grantee, is not or is likely to not be consistent with the Purposes of this Grant.

III. Permitted Uses of the Protected Property.

Notwithstanding the foregoing, Grantor and Grantee agree that the in promulgating and implementing the Management Plan, Grantee shall make provision, as appropriate, for the following public uses and limitations on public use in connection with the Protected Property, all said uses and limitations on public use to be monitored, implemented or enforced, as applicable, by the Grantee:

1. The right to use the Protected Property for all types of public non-commercial, pedestrian recreational purposes (including, but not limited to, bird-watching, walking, snowshoeing and cross-country skiing) consistent with the Purposes of this Grant.

2. The right to use the Protected Property to conduct all activities allowed by the Management Plans, provided that such activities are reasonably necessary to carry out the Purposes of the Grant and are consistent with this Grant. This paragraph III(2) shall not be construed to authorize the construction of new structures that are not otherwise specifically permitted by this Grant.

3. After consultation with the Nongame and Natural Heritage Program of the Vermont Department of Fish and Wildlife, the right to maintain, repair, improve and replace existing recreational trails, together with the right to clear, construct, repair, improve, maintain and replace new trails, provided that the construction, maintenance, location and use of all trails are consistent with the Purposes of this Grant and are provided for in the Management Plans.

4. The right to install and maintain fencing to manage pedestrian and vehicular access to the Protected Property consistent with the Management Plans.

5. The right of the City of Burlington to charge members of the public reasonable fees for admission to and use of the Protected Property, provided that such fees are collected only for community and public recreation, education or entertainment events on the Protected Property (including, without limitation, children's activities, concerts, fairs and celebrations) or such fees are reasonably necessary to support the Protected Property. The right to charge organizations reasonable fees for recreational use of a portion of the Protected Property provided that such use does not unreasonably interfere with the access of the general public to the Protected Property. Fees shall not be based on place of residency. All fees charged for admission to or use of the Protected Property shall be consistent with the Purposes of this Grant, especially that of public access, and shall be provided for in the Management Plans.

6. The right to issue temporary special use permits or licenses authorizing the commercial or non-commercial use of the Protected Property for recreational, educational, or research purposes, provided that any such permit or license (i) does not unreasonably interfere with the access of the general public to the Protected Property, (ii) is for uses consistent with the Purposes of this Grant, and (iii) authorizes only uses of or actions on the Protected Property consistent with Sections II, III and IV of this Grant.

IV. Public Access.

Grantor and Grantee covenant and agree that the Protected Property shall be available to the general public for all types of dispersed, pedestrian recreational purposes (including, but not limited to, bird-watching, walking, snowshoeing and cross-country skiing) consistent with the Purposes of this Grant. Notwithstanding the foregoing, Grantee, through its Managements Plans or implementation of its Management Plans, may limit or restrict public access to the Protected Property to assure compliance with the requirements of this Grant, to protect natural habitats, to protect the public health or safety (including, but not limited to, the right to permit, regulate or prohibit hunting). Grantor reserves the right to restrict nighttime public access to the Protected Property to promote the quiet enjoyment of persons living in nearby residential areas. If Grantee approves a conveyance of the Protected Property, then Grantee may also require that a separate Grant of Public Access Easement also be conveyed to Grantee in a form approved by Grantee.

V. Enforcement of the Restrictions.

Grantee shall make reasonable efforts from time to time to assure compliance by Grantor and members of the public with all of the covenants and restrictions herein. In connection with such efforts, Grantee may make periodic inspection of all or any portion of the Protected Property and for such inspection and enforcement purposes, Grantee shall have the right of reasonable access to the Protected Property. In the event that Grantee becomes aware of an event or circumstance of non-compliance with the terms and conditions herein set forth, Grantee shall give notice to Grantor of such event or circumstance of non-compliance via personal service or certified mail, return receipt requested, and demand corrective action by Grantor sufficient to abate such event or circumstance of noncompliance and restore the Protected Property to its previous condition. In the event there has been an event or circumstance of non-compliance which is corrected through negotiation and voluntary compliance, Grantor shall reimburse Grantee all reasonable costs incurred in investigating the noncompliance and in securing its correction.

Failure by Grantor to cause discontinuance, abatement or such other corrective action which are the result of the affirmative acts of the Grantor as may be demanded by Grantee within a reasonable time after receipt of notice and reasonable opportunity to take corrective action shall entitle Grantee to bring an action in a court of competent jurisdiction to enforce the terms of this Grant and to recover any damages arising from

such noncompliance. Such damages, when recovered, may be applied by Grantee to corrective action on the Protected Property, if necessary. If the court determines that Grantor has failed to comply with this Grant, Grantor shall reimburse Grantee for any reasonable costs of enforcement, including court costs and reasonable attorneys' fees, in addition to any other payments ordered by such court. In the event that Grantee initiates litigation and the court determines that Grantor has not failed to comply with this Grant and that Grantee has initiated litigation without reasonable cause or in bad faith, then Grantee shall reimburse Grantor for any reasonable costs of defending such action, including court costs and reasonable attorneys' fees. The parties to this Grant specifically acknowledge that events and circumstances of non-compliance constitute immediate and irreparable injury, loss and damage to the Protected Property and accordingly entitle Grantee to such equitable relief, including but not limited to injunctive relief, as the Court deems just.

The remedies described herein are in addition to, and not in limitation of, any other remedies available to Grantee at law, in equity, or through administrative proceedings. No delay or omission by Grantee in the exercise of any right or remedy upon any breach of Grantor shall impair Grantee's rights or remedies or be construed as a waiver. Nothing in this enforcement section shall be construed as imposing a liability upon a prior owner of the Protected Property, when the event or circumstance of non-compliance occurred after said prior owner's ownership or control of the Protected Property has terminated.

Notwithstanding the foregoing provisions of this Section V, in the event of violations of the Management Plan or of the terms of this Grant by members of the public or by anyone other than the Grantor, its successors or assigns, Grantee agrees that it shall not involve the Grantor, or its successors or assigns in any enforcement action.

VI. Miscellaneous Provisions with Respect to the Protected Property.

1. Where Grantor is required, as a result of this Grant, to obtain the prior written approval of Grantee before commencing an activity or act, and where Grantee has designated in writing another organization or entity which shall have the authority to grant such approval, the approval of said designee shall be deemed to be the approval of Grantee, provided that Grantor has given its written consent to such designation, which consent shall not be unreasonably withheld. Grantor shall reimburse Grantee's designee for all extraordinary costs, including staff time, incurred in reviewing the proposed action requiring Grantee's approval; but not to include those costs which are expected and routine in scope. When Grantee has authorized a proposed action requiring approval under this Grant, Grantee shall, upon request, provide Grantor with a written certification in recordable form memorializing said approval.

2. It is hereby agreed that the construction of any buildings, structures or improvements, or any use of the land otherwise permitted under this Grant, shall be in accordance with all applicable ordinances, statutes and regulations of the City of Burlington and the State of Vermont.

3. Grantee shall transfer the development rights and conservation easement and restrictions conveyed by Grantor herein only to a State agency, municipality, or qualified organization, as defined in Chapter 34 or Chapter 155 Title 10 V.S.A., in accordance with the laws of the State of Vermont and the regulations established by the Internal Revenue Service governing such transfers.

4. In the event the development rights or conservation restrictions conveyed to Grantee herein are extinguished by eminent domain or other legal proceedings, Grantee shall be entitled to any proceeds which pertain to the extinguishment of Grantee's rights and interests. Any proceeds from extinguishment shall be allocated between Grantor and Grantee using a ratio based upon the relative value of the development rights and conservation restrictions, and the value of the fee interest in the Protected Property, as determined by a qualified appraisal performed at the direction of either Grantor or

Grantee in the year of this conveyance. Grantee shall use any such proceeds to preserve undeveloped and open space land in order to protect the aesthetic, cultural, educational, scientific, and natural resources of the state through nonregulatory means.

5. In any deed or lease conveying an interest in all or part of the Protected Property, Grantor shall make reference to the conservation easement, restrictions, and obligations described herein and shall indicate that this easement and restrictions are binding upon all successors in interest in the Protected Property in perpetuity. Grantor shall also notify Grantee of the name(s) and addressee(s) of Grantor's successor(s) in interest.

6. Grantee shall be entitled to record this Grant, or to record a notice making reference to the existence of this Grant, in the City of Burlington Land Records as may be necessary to satisfy the requirements of the Record Marketable Title Act, 27 V.S.A., Chapter 5, Subchapter 7, including 27 V.S.A. §§ 603 and 605.

7. The term "Grantor" shall include the successors and assigns of the original Grantor, Burlington Housing Authority. The term "Grantee" shall include the successors and assigns of the original Grantee, City of Burlington, Department of Parks and Recreation.

8. Nothing in this Grant is intended to or shall be deemed to impair the fee simple ownership of the Grantor, its successors or assigns, in and to the Protected Property, subject only to the rights provided to the Grantees under this Grant.

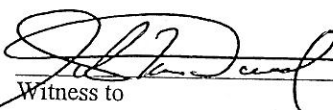
INVALIDATION of any provision hereof shall not affect any other provision of this Grant.


TO HAVE AND TO HOLD said granted development rights and conservation easement and restrictions, and executory interest, with all the privileges and appurtenances thereof, to the said Grantee, CITY OF BURLINGTON DEPARTMENT OF PARKS AND RECREATION, and its successors and assigns, to its own use and behoof forever, and the said Grantor, Burlington Housing Authority, on behalf of itself and its successors and assigns, does covenant with the said Grantee, its successors and assigns, that until the enrolling of these presents, it is the sole owner of the premises and has good right and title to convey the same in the manner aforesaid, that the premises are free from every encumbrance, except easements and use restrictions of record, and permits, including, without limitation, Land Use Permit No. 4C0657, and it hereby engages to warrant and defend the same against all lawful claims whatever.

IN WITNESS WHEREOF, Paul Dettman, duly authorized agent of the BURLINGTON HOUSING AUTHORITY has executed this Grant on this 21st day of October, 2004.

IN THE PRESENCE OF:

BURLINGTON HOUSING AUTHORITY

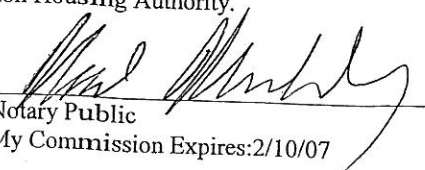

Witness to

By: 
Its Duly Authorized Agent

902 600

STATE OF VERMONT
COUNTY OF CHITTENDEN, SS.

At Burlington, Vermont, on this 21st day of October, 2004, personally appeared Paul Dettman, duly authorized agent of the Burlington Housing Authority, and he acknowledged this instrument, by him sealed and subscribed, to be his/her free act and deed, and the free act and deed of the Burlington Housing Authority.

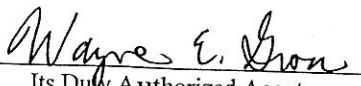

Notary Public

My Commission Expires: 2/10/07

Approved by the CITY OF BURLINGTON, DEPARTMENT OF PARKS AND RECREATION:

Date 12/6/04

By


Its Duty Authorized Agent

F:\common\USER\NEIL\BHA\Venus Ave\Cons.Easements\Parks.VHCB easement.wpd

902 601

SCHEDULE A

A parcel of land with no improvements thereon, located in the City of Burlington, County of Chittenden and State of Vermont and further described as follows:

Being a parcel of land containing 3.2 acres, more or less, located adjacent to and easterly of the approximately 2 acre parcel conveyed by Hauke Building Supply to the City of Burlington Department of Parks and Recreation by Warranty Deed dated January 10, 1989 and recorded in Volume 394 at Page 404 of the Land Records of the City of Burlington. The herein conveyed parcel being the eastern portion of a lot of land depicted as "Park Land" on a plan entitled "Plan Showing Fairmont Place Condos" dated January 1988, prepared by Warren A. Robenstien and recorded at Map Hanger 190 at Page D of the Burlington Land Records (hereafter called the "Park Land"), and being all of the remaining portion of said Park Land not previously conveyed by Grantor to the City of Burlington Department of Parks and Recreation by the above-described Deed in Volume 394 at Page 404.

Being all and the same land and premises conveyed to the Burlington Housing Authority by Warranty Deed of Hauke Building Supply, Inc. and recorded in Volume 650, Pages 575-76 of the Land Records of the City of Burlington.

The property is subject to the terms and conditions of Land Use Permit #4C0657 dated May 30, 1986 and recorded in Volume 337 at Page 467, as corrected in Volume 401 at Page 608 of the Burlington Land Records, and is further subject to the "Notice of Permit Requirements" as follows:

In order to comply with applicable state rules concerning potable water supplies and wastewater systems, a person shall not construct or erect any structure or building on the parcel of land described by this deed if the useful occupancy of that structure or building will require the installation of a potable water supply or wastewater system, without first complying with the applicable rules and, if necessary, obtaining the required permit. Any person who owns this property acknowledges that this parcel may not be able to meet state standards for a potable water supply or wastewater system and, therefore, this parcel may not be able to be developed.

Reference is hereby made to the aforementioned instruments, the records thereof and the references therein contained, all in further aid of this description.

Welcome to Mt. Calvary Red Maple Wetland



Please help to protect this property
for future generations by respecting the following regulations:

No motorized vehicles or bicycles
No open fires or glass containers
Stay on designated paths

No firearms, hunting or trapping
No structures including forts and treehouses
Remove no plants, animals, artifacts or rocks

Dogs must be leashed—Please clean up after your pet

Open Dawn to Dusk

Landowners: Burlington Housing Authority and Burlington Parks and Recreation
Managed by Burlington Parks and Recreation, Conservation Legacy Program
This area was protected with the assistance of The Vermont Housing and Conservation Board.
For more information contact, Burlington Department of Parks and Recreation
802-864-0123 www.enjoyburlington.com