Abstract
A land management plan for the 62.5-acre Case Estates in Weston, Massachusetts.

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January 2020
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1. Overview

The Case Estates is a 62.5-acre open space property acquired by the Town of Weston in 2016 and located in the geographical center of Weston. With its array of forests, fields, and wetlands, the Case Estates provides Weston with ecological values, scenic views, and passive recreational opportunities. Throughout the 1900’s, it served as an experimental farm under the ownership of Marion Case and then later as a horticultural property of Harvard University’s Arnold Arboretum. In 2006, Weston Town Meeting voted to purchase the property from Harvard University for open space and municipal purposes, but the closing was delayed for a decade due to soil contamination, legal wrangling, and eventual remediation work. The Town of Weston finally took ownership of the Case Estates in 2016. During these negotiation years, limited maintenance was performed at the Case Estates, and the property began showing signs typical of abandoned agricultural land, such as encroachment of woody growth along field edges and under field trees, overgrowth and dilapidation of stone walls, and invasion by non-native plant species. Today, the property is undergoing a transition from the heavily managed agricultural and horticultural landscape that it served as for over 100 years to, to a property that was untended for approximately 20 years, to a municipally owned open space managed on a limited budget for habitat, passive recreation, and scenic qualities. Future agricultural uses and development are also possibilities on portions of the property. Responsibility for the Case Estates is shared by the Select Board and the Conservation Commission. The Town of Weston engaged Mass Audubon’s Ecological Extension Service to prepare this Ecological Management Plan for the next 7-year period at the Case Estates. The intent of this plan is to provide management recommendations for property that foster ecological values, passive recreational uses, and scenic views while allowing for possible long-term future uses that may include agriculture or development.

2. Management Plan Goals

Considering the ecological needs, community desires, and constraints and resources discussed in this plan, the recommended goals for ecological management at the Case Estates over the next 7 years are to:

- Improve the meadows for pollinator habitat;
- Reduce invasive plant infestations to minimize spreading and improve habitat quality;
- Manage field edges to retain the extents of the fields;
- Maintain stone walls for scenic qualities;
- Protect specimen trees and shrubs, including both historic and recent plantings;
- Welcome passive recreational users to the property, including users of all mobility levels; and
- Accomplish the management activities as efficiently and economically as possible.
3. Case Estates Description

The 62.5-acre Case Estates landscape features forests, fields, wetlands, and remnants from the historic use of the land for agriculture and horticulture, including stone walls, a stone incinerator, and specimen plantings (including some new plantings from 2016-2017). It is divided into a northern section and a southern section by Wellesley Street. The Case Estates is comprised of approximately 27 acres of fields and 35 acres of forest. Low wetlands on the western edges of the property connect to larger wetland systems on abutting properties. Management areas to be discussed in this plan are as follows and shown on Figure 1 – Case Estates Overview.

The Pine Woods: a 26-acre forested area located on the northernmost part of the Case Estates and connecting to the Woodland School.

The Hillcrest Corridor North: the open fields to the north of Wellesley Street (excluding the Lower Meadow)

The Lower Meadow: the low-lying field located to the west of the Overlook Site

The Hillcrest Corridor South: the open fields to the south of Wellesley Street (excluding the Nose and the South Corner)

The Nose: the area located at the intersection of Wellesley and Newton Streets

The South Corner: the savannah-like field fronting on Ash Street, with many trees interspersed throughout an old field

3A. Site Setting and Context

The 62.5-acre Case Estates is located in the geographic center of Weston near the intersection of four well-travelled roads (Wellesley Street, Ash Street, Newton Street, and School Street). The property is divided by Wellesley Street with approximately ½ of the property to the northwest of Wellesley Street and ½ to the southeast of Wellesley Street. The property is bordered by Ash Street and Alphabet Lane to the East, Woodland School to the North, Town-owned land to the West (mostly wetlands), and private lands to the South and Southwest. It is part of the Case’s Corner Historic District and is located adjacent to the Case Campus, which includes the public library, elementary school complex, town pool, Community Center, Council on Aging, and other community services. Land’s Sake Farm, located on the east side of Wellesley Street, is a community farm operated on Town-owned land that was once part of the Case Estates.

Three buildings situated on the Case Estates along Wellesley Street include a barn (1927), a schoolhouse (1909-10), and the Thomas Rand house (c 1790). The current understanding is that these buildings will be divided into 2 parcels and sold for future private ownership, with restrictions that allow for the preservation of the historic features of the buildings as well as the views over the field behind the buildings.
Pedestrian access to the Case Estates is from the Case Campus near the Community Center on the Legacy Trail, which is now under construction; from the sidewalk on Wellesley Street onto a connector path to the Legacy trail (now under construction); and from a trail that begins at the Woodland School parking lot. The site can also be reached by trail from the Chestnut Street Conservation Area. On the south side of Wellesley Street, access is from a path now under construction that enters the Case Estates just east of the driveway to 128 Wellesley Street and continues across the Case Estates to Ash Street. Parking is available at the Community Center and next to the Legacy Trail trailhead. For information about emergency and maintenance vehicle access, see section 3H: Safety Concerns.

3B. Historical Background

Much of the following information was taken from www.weston.org/579/Case-Estates and from a December 2018 Case Estates update given by Michael Harrity to the Board of Selectmen, included in Appendix C. A more thorough history of the Case Estates through 1960 can be found in Appendix D. Also see Farm Town to Suburb: The History and Architecture of Weston, Massachusetts- 1830-1980 by Pamela W. Fox.

The Case Estates began in 1863 when James Case, a Boston businessman, acquired its core property and built a summer residence, one of Weston’s first estates. James Case passed away in 1907, whereupon his daughter, Marian Case, at age 45, decided to embark on a career combining farming and education. She began buying nearby properties in 1909, and by 1920 her holdings included 105 acres, either purchased or inherited from her parents. From 1910 to 1919, her property
was known as Hillcrest Farms, which was an experimental farm and work/study experience for local boys during their summer vacation. Over the years, about 40 acres were under cultivation.

One of Miss Case’s goals for Hillcrest Farms was to operate a practical school of agriculture for boys on their long summer vacations. Much of the farm labor was done by the Hillcrest Boys, generally up to 20 local boys age 12 years and older. One of the Hillcrest Boys described Miss Case’s original goals as follows: “Miss Case has said that we want to make this the most perfect farm in New England, to grow the best quality of fruit, to inspire New Englanders to return to the soil.” A 1917 article lists 50 vegetables grown at Hillcrest, with the most important being potatoes and corn. Cherries, pears, plums, apples, peaches and grapes were also grown, along with ten varieties of berries. These were delivered to Weston residents and sold on the premises. The farm was also home to a variety of grazing livestock. The income from sales never equaled the cost of operating the property in Miss Case’s unique manner.

Horticultural development began in the 1920’s, primarily through the work of horticulturalist John Wister, and was inspired by Charles Sargent and John Jack of the Arnold Arboretum. The name of Hillcrest Farm was changed to Hillcrest Gardens in 1920, reflecting the new emphasis on horticulture and additional uses of the property for display gardens and as a plant introduction station.

Marian Case was a prominent member of local and international horticultural societies and was influential in horticultural affairs in New England. She used Hillcrest Gardens for experiments in raising

The Hillcrest Boys
seeds and plants collected from all over England, the Mediterranean area, and South Africa. Charles Sargent, John Jack, and E. H. Wilson provided her with new and unusual seeds and plants for her horticultural displays and lectured at the school. She was an active member of the Massachusetts Horticultural Society. Miss Case planned regular lectures throughout the summer by well-known specialists from horticultural organizations throughout the region. These lectures were open to the public, and by 1919, they were held weekly.

Hillcrest Gardens flourished in the 1930’s until the disastrous hurricane of 1938, which damaged many of the specimen trees and destroyed the orchards and over 3,000 trees in woodland areas. The following year, ill health forced Miss Case to look for an organization to carry on the Hillcrest tradition. At her death in 1944, the property was willed to the Arnold Arboretum.

As the Case Estates, under Harvard University’s Arnold Arboretum, the property was a center for plant propagation and experimentation and for educational programs held in the schoolhouse. The land was used for display gardens, Arboretum classes, and special events, and as a nursery and testing area for new plants. A small ornamental tree collection was planted, and the rhododendron gardens expanded under the direction of the Massachusetts Chapter of the American Rhododendron Society. Numerous small plant societies maintained gardens on the property.

In 1986, Harvard University sold about one-third of the property, a 35-acre field, to the Town of Weston, (Land’s Sake currently leases this property, called “Forty Acre Field,” from the Town). In 1989-90, the Arboretum determined that the Case Estates was no longer central to its mission and began to phase out operations. In 2000, the Town of Weston’s Committee to Advise on Land Acquisition produced a report that identified the Case Estates as the top land protection priority in Weston. In 2005, Harvard University announced that it would sell the remaining 62.5-acres of the Case Estates in its entirety for $27 million. The Town then established the Case Estates Review Committee, charged with evaluating the property and determining the potential interest of the Town of Weston in acquiring it.

The Case Estates Review Committee unanimously recommended that the Town purchase the Case Estates. Their report to the Select Board (dated May 17, 2006) prioritized the protection of the Hillcrest Corridor in its entirety and identified other parts of the Case Estates as “lands subject to change,” parcels that could either be sold or converted to other municipal uses in the future. (See section 3E: Ownership Status of Parcels for more information). According to the report:

“We must state that in the best of all worlds it would be our committee’s first choice to preserve the Case Estates in its entirety and maintain it in much the same way we see today… We recognize, however, the significant financial challenges involved in making this vision a reality, and therefore we have had to make some very difficult choice relating to dividing the property into parcels and priority setting.”
In 2006, Weston Town Meeting voted to purchase the 62.5 Case Estates property from Harvard University. Prior to the scheduled closing at the end of December 2006, the Town undertook soil testing for pesticide contamination where apple trees had been planted. Elevated levels of lead and arsenic from pesticides were found in 6 of the 16 soil samples, and the closing was called off until Harvard completed a cleanup process in accordance with guidelines established by MassDEP. Harvard began an extended sampling of the property to determine the location of elevated levels of pesticides. In this process, more pesticide contamination was uncovered in unexpected places, including in the Pine Woods. Harvard grew frustrated by the continued testing required by the Town, and legal wrangling and an eventual lawsuit ensued. Harvard and Weston settled amicably in 2015. Harvard completed mitigation work consistent with the settlement agreement and MassDEP guidelines in the spring of 2016. Weston acquired the Case Estates on June 8, 2016 for a price of $13,740,200.

The purchase was finally completed in 2016, with part of the purchased funded by Community Preservation Act funding and the rest funded by general Town funds (see section 3E: Ownership Status of Parcels for more information).

Following the Town’s purchase of the Case Estates, some site work was undertaken to reclaim land that had become overgrown by invasive species and brush during the 10-year negotiation and remediation period. Additionally, the Town engaged the landscape architecture firm Thomas Wirth Associates to draft a Case Estates Master Plan that envisioned possible agricultural, forestry, and passive recreational uses of the property. The intent of the plan was to provide guidance so that anything undertaken on the property in the short-term doesn’t preclude potential future farm and forestry uses. (See section 4C(ii): Community Desires and Figure 10 for more on the Thomas Wirth Master Plan).

In 2017, design work began on the Legacy Trail and connector paths at Case Estates, drawn from proposed path layouts on Thomas Wirth Master Plan. As of this writing, construction is underway on this pathway network. (See section 3D: Trails and Trail Connections for more information on the Legacy Trail and its connector paths).

3C. Ecological and Cultural Features
The site includes a variety of significant ecological and cultural features, including physical features, and natural habitats.

i). Surficial Geology
Much of the Case Estates is covered by a relatively thin layer of till and smaller areas of course till deposited by the last glacier. There are a few bedrock outcrops in the northwestern portion of the site. Several flat terraces, one above the other, can be discerned from the Land’s Sake parking area. These flat terraces are former beaches of Glacial Lake Sudbury. Lake Sudbury was a glacial meltwater lake that formed as the glacier wasted away about ten thousand years ago. The lake ran from what is now the Wayland border east to Green Lane. There are several spillways from this former lake that can be seen in this vicinity.
ii). Topography
The topography of Weston is typical of New England, with gently rolling forested hills that give way to large expanses of low-lying wetlands and former farm fields. The variations in topography provide for distant views from higher elevations. The highest point at the Case Estates is approximately 260 feet in the portion of the site northeast of Wellesley Street (see Figure 2 – Topography). The site is dominated by this 260-foot-high area, and the gentle slope from this point back toward Wellesley Street makes up the scenic Hillcrest Corridor North. The lowest point at the Case Estates is approximately 196 feet near the southwest boundary of the northern section. The area south of Wellesley Street is gently sloped and drains to a wet area to the south, another low point at approximately 206 feet.

iii). Soils
The soils that underlay a landscape play an important role in determining what plants and habitat types will populate that landscape. Soil texture is classified by the relative composition of clay, silt and sand particles. Sandy soils tend to be well-drained and nutrient poor. Silty soils are described as “dusty” and are moderately drained and richer in nutrients; silts are commonly found in floodplains. Clay soils are typically poorly drained, nutrient rich, and dense. Ideal agricultural soil, called “loam,” is a combination of sand, silt, and clay with moderate drainage and nutrient availability as well as a density conducive to root growth and microbial community colonization. Loamy soils can retain moisture but drain moderately well such that the soils do not remain saturated for long periods of time.
Four soil types are present at the Case Estates (see Figure 3 – Soils), and their classifications point to the past and potential future uses of the property. Much of what is currently open field on the northeastern part of the property is covered with Narragansett Silt Loam, a well-drained, loamy soil that formed in friable glacial till with a silty layer on top. This is a productive agricultural soil particularly for silage corn, hay, and vegetables. Oaks, white pine, and beech are the most common forest species that grow in Narragansett Silt Loams. The Narragansett-Hollis Rock Outcrop Complex, located largely where the Pine Woods sits today, is best suited for woodland wildlife habitat because of proximity to bedrock. The Merrimac Fine Sandy Loam located on the section of the Case Estates to the southeast of Wellesley Street is generally a very deep, gently sloping, and somewhat excessively drained soil. It is well suited to cultivated crops, lawns, landscaping, and gardens. The Tisbury Silt Loam located on the southeastern portion of the property is a nearly level, moderately well drained soil that generally has a seasonal high-water table from late fall through midspring but becomes drier in the summer. Tisbury soil is suited for crop cultivation and woodland wildlife habitat.

Historic aerial photographs dating back to 1938 show that the areas of the Case Estates with the agricultural soils described above – Narragansett Silt Loam, Merrimac Find Sandy Loam, and Tisbury Silt Loam – were all in use for crop or hay cultivation, and these areas are still largely open fields today. The Narragansett-Hollis Rock Outcrop Complex, located approximately where the Pine Woods sits today, was forested in 1938 as well, likely due to its unsuitability for agricultural use.
During the remediation of contaminated soils at the Case Estates prior to the Town’s purchase of the land, some areas of soil have been disturbed. Soils in these remediation sites were removed and replaced with clean fill. See Figure 6 – Activity and Use Limitation Areas for more information about remediated sites.

iv). Natural Communities

Natural communities are divisions in plant communities based on conditions determined by the total landscape. Soil composition, slope, aspect, elevation and land use history are all factors that determine the distribution of natural communities on a site.

Approximately 27 of the site’s 62.5 acres is made up of old agricultural and horticultural fields, either open fields or mowed areas under scattered trees. These fields have been kept open for hundreds of years by farming activity and currently by periodic mowing.

There are a few wetland areas located on the Case Estates in low areas: two of these – on the South Corner and near the Lower Meadow – are part of larger forested wetland complexes on abutting land. Another isolated wetland – located to the west of the path that travels south into the Case Estates from Wellesley Street – was a former wetland plants demonstration garden.

Approximately 35 acres of the Case Estates is currently forested. The Pine Woods, approximately 26 acres, sits on the northern half of the site (see Figure 1 – Case Estates Overview). This area is predominately populated with white pines and some mixed hardwoods, primarily oaks. Additional forested land includes parcel 5 (predominantly white pines) and the area to the northwest of parcel 5 (predominately mixed hardwoods) with a total area of approximately 9 acres.

v). Ecological Significance

The Massachusetts Natural Heritage and Endangered Species Program has not listed any areas of the Case Estates as Priority or Estimated Habitat for threatened or endangered species. However, the Case Estates provides natural habitat and habitat connectivity in an area that is largely surrounded by the municipal facilities at Case Campus and private residences. Its proximity to other open spaces, including Weston Reservoir, Chestnut Street Conservation Land, Linwood Cemetery, and Land’s Sake farm, greatly enhances the open space and natural resources values of the entire area.

Wildlife use these inter-connected habitat areas as corridors to move about and seek food, cover, and water. Common habitat generalist mammals that are likely to occur within the area include: Virginia Opossum, Eastern Gray Squirrel, Red Squirrel, Eastern Chipmunk, Meadow Vole, White-footed Deer Mouse, Eastern Cottontail, Coyote, Red Fox, Long-tailed Weasel, Striped Skunk, Raccoon, and White-tailed Deer. Birds forage for insects, seeds, and small mammals in the fields and forests and nest throughout the area. Migratory bird species use the mix of forest, edge, and field habitats that are available within the Case Estates and surrounding habitats.

Weston’s long-term conservation stewardship plan, The Future of Weston’s Conservation Land (Jordan McCarron, 2014), addresses the forests in the Pine Woods and the adjacent forests on abutting
conservation and municipal lands. It notes that except for a limited area in the Pine Woods, these forests are not ideal for timber management due to their limited accessibility, abundance of habitat resources (wetlands, course woody debris, and dead snags), and a high percentage of the total basal area being dominated by large diameter trees.

There are three potential vernal pools and one certified vernal pool located near the Case Estates, but none on the Case Estates itself. Salamanders and wood frogs require vernal pools for breeding and egg-laying but spend most of their life cycle in adjacent forests. Therefore, vernal pools surrounded by upland forest, such as those found near the Case Estates, are critical for their survival. Small amphibians are an important part of the forest food chain, eating insects and providing significant food source for mammals, reptiles, and birds of prey.

vi). Areas of Significant Invasive Species Infestations

Invasive plant species are one of the greatest threats to the nature of Massachusetts because they out-compete, displace, or kill native species. These non-native species—many introduced to Massachusetts accidentally or on purpose for garden or landscape use—thrive and proliferate at the expense of native species. The Massachusetts Invasive Plant Advisory Group defines invasive plant species as “non-native species that have spread into native or minimally managed plant systems in Massachusetts. These plants cause economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those natural areas.” Having been transported out of their native environment, invasive plant species are free from the evolved, biological controls that would manage population expansions and maintain biological diversity in their native environment. Without these constraints, invasive species have the potential to monopolize natural communities, displacing a wide range of native species in our region.
Like many open spaces in suburban areas, the Case Estates has been infested by a number of invasive species. Management efforts initiated by the Town of Weston since 2016 have started to manage some of these infestations. However, many problem areas with high concentrations of invasive plant species remain in place (see Figure 4 – Areas of Significant Invasive Species Infestations). These include Japanese Knotweed at several areas; Black and Pale Swallowwort in the Hillcrest Corridor North and Lower Meadow; Black Locust along edge of the Pine Woods; Buckthorn in the Pine Woods; Tree of Heaven, Euonymus, Oriental Bittersweet, and Dame’s Rocket at the Nose; and Oriental Bittersweet and Black Locust in the South Corner. The old wetland demonstration garden has been infested by a number of invasive species that thrive in wet soils. Other invasive plant species are scattered at lower concentrations throughout the site and may also warrant control efforts (see section 5J: Management of Invasive Plant Species and Appendix A – Control Measures for Invasive Plant Species at the Case Estates).
Plantings of Interest
Under both Marion Case and the Arnold Arboretum, horticultural experimentation and education were key elements of the Case Estates (see section 3B: Historical Background). Over the years, various horticultural organizations maintained gardens here, including the Rhododendron Society of America, the Herb Society of America, the American Iris Society, and the American Hosta Society. Under Marion Case, extensive rhododendron, iris, and peony gardens flourished, as well as native herbaceous woods and wetland gardens. The 1938 hurricane devastated many of the plantings on the property at the time. The Arnold Arboretum later used the property as a nursery and testing area for new plant introductions to the Arboretum and for long-range growth studies of trees (see Appendix D- Arnoldia Bulletin).

In 2006, botanist Cheryl Lowe walked the property and interviewed people familiar with the Case Estates to determine what plantings of interest remained. In her report (see Appendix E –2006 Horticultural Report), she concluded that there are no plants of critical horticultural significance remaining on the property. Little remains of the Arnold Arboretum’s teaching gardens and experimental plantings, which were either removed by the Arboretum or taken over by invasive plants while negotiations were on-going. However, there are a few interesting plantings remaining from the Hillcrest Gardens and Arnold Arboretum days, noted on Figure 5 – Plantings of Interest.

The plantings of interest shown on Figure 5 - Plantings of Interest fall into two categories:

1. heritage plantings remaining from the Hillcrest Gardens and Arnold Arboretum years (indicated with purple arrows), and
2. newer plantings that were installed in 2016-2017 based on recommendations in the Thomas Wirth Master Plan (indicated with green arrows).

Marion Case’s rhododendron garden, which was subsequently expanded and maintained by the Massachusetts Chapter of the American Rhododendron Society, remains today as a treasured feature of the Case Estates, with some bushes being over a century old. All the horticulturally significant specimens were moved by the Rhododendron Society prior to the Town taking ownership of the property, many to the Massachusetts Horticultural Society’s Gardens at Elm Bank in Wellesley. The 2006 Horticultural Report (see Appendix E) said this about the rhododendron garden here:

“The area behind the big Stone Wall is where the Rhododendron Society worked extensively in a “woodland glade” setting, under an overstory of birch, pine, and oak. Immediately behind the wall (on the west side of the opening) are many nice, larger rhododendrons including R. ‘Helen Everett,’ R. ‘Vernus’ (acc. 1984), R. ‘Mrs C.S. Sargent’ (acc. 1984), and R. ‘Western Pink Diamond’ (mostly deciduous with remnant reddish winter leaf). Again, none are rare, although many are no longer easily available in the trade, according to George Hibben [of the Rhododendron Society]. Big, healthy specimens of *Kalmia latifolia* [mountain laurel] and *Ilex glabra* [inkberry] line the walk from the stone wall to the woodland glade that was the center of the rhododendron garden, although the *Ilex glabra* is now a little overgrown. Many plants were removed the landscape contractor who moved plants for the Rhododendron Society (he kept...
some plants in lieu of payment), but the glade is still nicely surrounded by low to moderate-height rhododendrons (*Rhododendron* ‘Molly Fordham,’ *R*. ‘Chinoides,’ *R*. ‘bakeri,’ and others).”

There are 2 magnolias near the new Legacy Trail trailhead at the old site of the Arboretum’s street tree collection, which went from there to the former old Cow Barn on what is now 101 Wellesley Street. The 2006 Horticultural Report (see Appendix E) notes these as *Magnolia x soulangiana* and *Magnolia loebneri* ‘Merrill.’ There may be other species remaining from the street tree demonstration site as well, noted by the 2006 Horticultural Report but not recently field-checked, including: East Asian hornbeam (*Carpinus tschonoskii*); Mountain silverbell (*Halesia tetraptera* ‘Rosea’); Korean mountain ash (*Sorbus alnifolia*); and a native, multi-trunked hop-hornbeam (*Ostrya virginiana*).

In the Pine Woods north of the Overlook site, there is an area of hollies (*Ilex opaca*) that was part of the Arboretum’s holly collection. Some of these are larger, older trees, but there are many younger saplings as well. The 2006 Horticultural Report says of these: “Many of the remaining plants are healthy, although not unusual cultivars. The larger pine and other tree saplings would definitely need to be removed to let in more light if these are to stay.”
A butternut (*Juglans cinerea*) is located along the stone wall near the incinerator in Hillcrest Corridor North. Butternuts were once common throughout the eastern United States but populations were devastated by the butternut canker starting in the early 20th century, so they are no longer a common feature on our landscape. There is no treatment for butternut canker. Totally free-standing butternuts seem to withstand the canker better than ones in dense stands, which may be why this butternut has survived thus far.

*Butternut along the stone wall in Hillcrest Corridor North, June 2019*

A persimmon (species unknown) is located in the Hillcrest Corridor North in the field behind the incinerator. It has fruited in recent years. A grove of black walnuts (*Juglans nigra*) is located in the South Corner. Some dawn redwoods (*Metasequoia glyptostroboides*) remain along the back of the old perennial garden site. In the Nose, the 2006 Horticultural Report noted difficulty in identifying any of the remaining historical trees.

In 2016-2017, the Town planted a variety of trees and shrubs at the Case Estates based on recommendations on the Thomas Wirth Master Plan (see Figure 10). Planted species include red oak, river birch, “Donald Wyman” crabapple, Cornelian cherry (dogwood), “Arnold Promise” witch hazel, shadbush, northern bayberry, dawn redwood, western red cedar, Norway spruce, and cedar of Lebanon.
These plantings are also shown generally on Figure 5 – Plantings of Interest and in more detail on paper plans available in the Conservation Department.

Areas with Activity and Use Limitations (AULs)

Due to the discovery of soil contamination at the Case Estates, soil remediation efforts were undertaken prior to the Town’s purchase of the property and were completed in 2016. Contamination included lead, arsenic, chromium, and other pesticides from prior agricultural activity. In areas with the highest concentration of contamination, soils were removed and replaced. Areas with less contamination were designated as areas with Activity and Use Limitations (AULs). In the AULs, use is limited to passive recreational uses with minimal soil disturbance, which provides that users are not exposed to the residual soil contamination lying several inches below the surface. See Figure 6 – Activity and Use Limitation Locations.
ix). Culturally Significant Features
Several features remaining at the Case Estates from the Hillcrest Farm/Garden era are of cultural and historical interest. The three structures at 131 Wellesley Street – the Barn, the Schoolhouse, and the Rand House – are all of historical interest; it is the current understanding that these structures will have historical preservation restrictions placed on them before they are sold for private use (see Figure 1 – Case Estates Overview). A stone incinerator, constructed from field stone in 1924, was used to burn brush and debris from the farm to make ashes for fertilizer (see Figure 1 – Case Estates Overview). Overgrowing vegetation was removed from the outside and inside of the incinerator in 2017 to reduce deterioration. The foundation from an old piggery remains in the southeastern section of the Pine

Figure 6 - Activity and Use Limitation Locations

Areas shown in PINK and BLUE are locations where contaminated soil was removed and replaced and are safe for any type of use. The areas in GREY were encumbered by Activity and Use Limitations (AULs).
Woods. Three structures were removed around the time of the Town’s purchase of the property, including the Summer House, which was located at the current Overlook Site on the Legacy Trail, an apple cellar that was located behind 226 Ash Street, and the collapsed piggery. A large rectangular hedgerow surrounding formal gardens, which was formerly located behind the Schoolhouse, had been overgrown by 2016 and was removed.

Two areas are significant for the views they provide: the Nose, because it is located at the intersection of the four highly traveled roads; and the Hillcrest Corridor North, because of its view over rising open fields from Wellesley Street, looking north (see Figure 1 – Case Estates Overview).

Stonewalls are found at the Case Estates along Ash Street and Wellesley Street and internally in some locations (see Figure 13 – Stone Walls Bordering the Case Estates). Many of these are classic New England stone walls, some dating to the 18th and 19th centuries and others to the early 20th century Hillcrest Farm/Garden years. A long row of single large boulders, called a “hen’s-tooth” or “balancing wall,” runs along Wellesley Street from the barn almost to the private property at 101 Wellesley Street. This unique wall was built in 1913 from boulders found on site. During the work to remediate soil
contamination in 2015-2016, this wall was partially disturbed and then reassembled and cemented into place in some locations (work conducted with a Scenic Roads by-law permit).

A high stone-wall separates the former Barker House (101 Wellesley Street, privately owned) from the former Case Estates cow barn area. Behind the Barker House site is what is reputed to be the largest free-standing dry wall of native stones in New England. Built in 1913, the wall is approximately 200 feet long, 10' high, and 4' thick (almost 6’ in some sections) and was built to separate formal gardens from the forest beyond. It was a birthday gift from Ms. Case to her sister Louisa and is referred to as “Louisa’s Wall.”

3D. Trails and Trail Connections
Because of its location, the Cases Estates is an important site for trail connections. Figure 1 – Case Estates Overview show the existing and proposed trails. Existing trails at the Case Estates make connections to the Woodland School, Linwood Cemetery, and Chestnut Street Conservation Area.
At the time of this writing, construction is underway on the Legacy Trail and two connector pathways. The segments of this new path network are:

- The Legacy Trail (0.3 miles, paved): traveling from Alphabet Lane (on Case Campus) to the Overlook Site, which is a patio with a scenic view, benches, and dedicated engraved pavers.
- The Legacy Trail – Wellesley Street Connector Path (0.1 miles): traveling from the Legacy Trail to the north side of Wellesley Street.
- The Wellesley Street – Ash Street Connector Path (0.3 miles): traveling from the south side of Wellesley Street to Ash Street, where it will eventually connect to the Ash Street sidewalk and Weston Reservoir (designs are currently being finalized for the Ash Street sidewalk; a request for construction funding will be brought to a future Town Meeting).

The Legacy Trail and connector paths have been designed to meet the Forest Service Trail Accessibility Guidelines (FSTAG) standards and has been permitted by the Massachusetts Architectural Access Board (MAAB), with paving, gentle grades, and resting benches along the way. This path network is intended to provide a trail experience that can be accessed by any user, including those with limited mobility, wheelchairs, walkers, and strollers.
Future mown paths could connect the Case Estates to Land’s Sake farm as well; currently, connection to Land’s Sake is possible by crossing Case Campus.

3E. Ownership Status of the Parcels
As Town-owned property, the Case Estates has been divided into 9 parcels, some under the care and control of the Conservation Commission and others under the care and control of the Select Board. Figure 7 - Parcel Breakdown shows the division of parcels. Parcels of the Conservation Commission are for passive recreational use and are protected as open space under Chapter 97 of Massachusetts General Law. Parcels of the Select Board are considered general municipal purposes land and can be developed and sold for uses other than passive recreation. Currently, the Select Board has tasked the Conservation Commission with general maintenance of all of the Case Estates parcels.

Parcels 1, 2, and 6a were acquired with Community Preservation Act funds as open space under the care and control of the Conservation Commission. As parcels purchased with Community Preservation Act funds, they will have Conservation Restrictions placed on them, to be held by Weston Forest and Trail Association.

The remaining parcels – parcels 3, 4, 5, 6, 7, 8, and 9 – were acquired with general Town funds as municipal purposes land under the care and control of the Select Board.

Parcels 4 and 5 (which contain the barn, the schoolhouse, and the Rand house) are intended to be reconfigured and sold for private use, with restrictions; this reconfiguration is currently in progress. The original vision for these parcels was that a non-profit organization would purchase or lease them for agricultural, environmental, or educational uses, but that vision has not come to fruition. The Town of Weston cannot retain and operate these buildings due to constraints regarding wastewater.
Parcels 1 & 2 & 6a: CPA funded for Open Space

Parcels 7 & 8: Municipal use

Parcels 3, 4, 5, 6 & 9: to be sold for residential use if private funds to preserve them as open space cannot be raised.

As unanimously approved at Weston’s 2016 Town Meeting

Parcel 8 is currently a parking lot servicing the Field School, and the use of Lot 7 is yet to be determined but may be used as a school site in the distant future. Parcel 3 is a small wooded lot that may be sold for residential use. Parcels 6 and 9 are currently municipal purposes land; the Conservation Commission would like to see these two parcels permanently protected for open space purposes.

See Appendix C – 2018 Update to the Board of Selectmen for more information on the status of the parcels.

3F. Encroachments and Abutter Matters

When the Town of Weston acquired the Case Estates, two encroachments of private land into the Case Estates were identified, as follows:

102 Wellesley Street

The lawn of 102 Wellesley was encroaching into the adjacent Case Estates fields in 2016. The Conservation Commission worked with the homeowners to resolve this encroachment in 2016-2017. Iron pin bounds were installed along the property boundary of the Case Estates and 102 Wellesley Street, and boulders were placed at these bounds in several locations. The encroachment was monitored in 2018 and compliance was confirmed. Documentation of this encroachment is in the Conservation Commission office in the encroachment files.
The southern-most section of the white fence at 102 Wellesley Street sits just inside of the conservation land property boundary. The Commission did not require that this fence be relocated but asked that in the future, if the fence is repaired or replaced, it be moved to their side of the property boundary.

In 2019, the Conservation Commission and the homeowner at 102 Wellesley Street worked out an agreement in which the homeowner is permitted to maintain a small Case Estates field that abuts their property. The Conservation Commission had decided to stop mowing this field because it is cut off from the other Case Estates fields, not accessible by trail, and not visible to the public. In light of this decision, the homeowner at 102 Wellesley Street requested permission to maintain this meadow as a pollinator field and to remove invasive species. The request was approved with the following conditions:

- Mowing may occur once per year after October 1.
- The Conservation Commission must be notified at least one week prior to any field work.
- The name of the landscaper must be provided so that the Commission can contact the landscaper to review the conditions.
- The approximate area to be mown must be marked in the field prior to any site work.
- Invasive species may be removed by hand pulling only.

226 Ash Street

Lawn and a stone retaining wall are encroaching into the Case Estates fields from 226 Ash Street. The proposed resolution to this encroachment is for the Town to sell a small portion of Parcel 9.
(municipal purposes land under the Select Board) to the owners of 226 Ash Street, thereby resolving the odd shape of the 226 Ash Street lot that initially led to the encroachment. The Select Board has identified arranging this sale as one of their priority projects for 2020. See Appendix C – 2018 Update to the Board of Selectmen for more details and for a map of the proposed land sale.

3G. Permitted and Prohibited Uses
For permitted and prohibited uses on Conservation Land, see Appendix E - Weston Conservation Commission Conservation Land Use Policy and Regulations. This policy and regulations apply specifically to the parcels under the care and control of the Conservation Commission (parcels 1, 2, and 6a). They may also be used as guidance for the use of the remaining Case Estates municipal land.

3H. Safety Concerns
The primary safety concerns at the Case Estates are ticks, poison ivy, and downed trees. The Legacy Trail and connector paths are designed to be 5’ wide, which should provide enough clearance for users to avoid ticks and poison ivy while using these paths. Mowing and control of vegetation along the trail edges throughout the Case Estates can further decrease the risk of visitors encountering ticks and poison ivy. As is the case with all of Weston’s trails, Weston Forest and Trail Association’s trails manager surveys the trails annually for fallen trees and responds to reports from trail users regarding downed trees, hanging branches, and other trail hazards.

Awareness of the Activity and Use Limitation (AUL) areas needs to be maintained into the future (see Figure 6 - Activity and Use Limitation Locations). In these areas, activities are restricted indefinitely so that users do not come in contact with residual contamination located several inches below the ground surface. The AULs have been marked in the field with boundary markers (typically iron pins, sometimes with boulders placed next to them).

The Legacy Trail and its connector paths are intended for use by people with limited mobility, wheelchairs, strollers, and walkers. Special care should be taken at the Case Estates to protect these users from conflicts with off-leash dogs. With its open fields, substantial trail network, and ample nearby parking, the Case Estates has the potential to become a popular spot for dog walking as awareness of the property and its trails expands.

Land’s Sake periodically conducts forestry operations at the Case Estates (harvesting timber for firewood). Land’s Sake follows prescribed safety protocols while conducting these operations, as they do throughout Weston’s conservation lands.

The current maintenance and emergency vehicle access is from Wellesley Street at 2 locations: heading north, on the driveway on parcels 4 & 5; heading south, at a paved apron just east of the driveway to 128 Wellesley Street. When the Legacy Trail and connector paths are complete and parcels 4 & 5 are sold, access will change to the future vehicle access sites shown on Figure 9 – Emergency and Maintenance Vehicle Access. (The future access heading south from Wellesley Street is scheduled to be
improved in 2020). Access is also possible but less ideal from the Woodland School parking lot. On Ash Street, a small opening in the stonewall provides access for small vehicles.

Figure 9 – Emergency and Maintenance Vehicle Access
4. Ecological Management Guidelines and Goals

The intent of this plan is to provide management recommendations for property over the next 7 years that foster ecological values, passive recreational uses, and aesthetic qualities while allowing for possible long-term future uses that may include agriculture or development.

4A. Managing Conservation Areas in an Era of Climate Change

Until recently, planning for the management of natural resources has largely assumed a stable climatic background. Now there is widespread agreement among scientists and the public that the climate is changing. Massachusetts is already experiencing the effects of climate change, including hotter summers, warmer winters with less snow cover, rising sea levels, more frequent severe weather events, and inland flooding. On open spaces in our region, it is likely that climate change will:

- increase the number of very hot days and degrade air quality
- compromise infrastructure like trails (due to increased erosion and wetness)
- increase the risks from storm events (blow-downs and other damage)
- increase vector-borne illnesses (such as West Nile and Lyme disease).

Manomet Center for Conservation Science and the Massachusetts Division of Fisheries and Wildlife have published a study promoting two primary objectives for the management of conservation sites and habitats in the face of climate change: (1) managing resilience and (2) managing change. The concepts of resilience and managing change are useful to keep in mind when moving forward with management at the Case Estates.

4B. Summary of Current Management Activities

The Case Estates is a large property with significant management needs, due to the sizeable open fields, the past land uses, and years of neglect. During the purchase negotiations between Harvard University and the Town, which took more than 10 years, the Case Estates was minimally maintained, resulting in a proliferation of woody growth into fields, overgrowth of stone walls, decline in health of specimen trees, and invasive plants. Since its purchase of the land in 2016, the Town has undertaken the following land management activities:

- Clearing of significant areas of overgrown brush and invasive plants in the fields (2016-2017);
- Planting of some trees as proposed by the Thomas Wirth Associates Planting Plan (2016-2017);
- Resolution of encroachments into Case Estates land from abutting private properties (2016-ongoing);
- Grading, rock removal, and clearing of woody growth around tree bases to make for easier mowing access (2017-2018);

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• Selective harvesting of timber for firewood by Land’s Sake (2017-2018);
• Annual clearing of trails and periodic mowing of trails through fields;
• Annual mowing of fields (currently 1-2 times during the summer months);
• Ongoing removal of dead and impaired trees in the fields and along field edges;
• Minor treatment of some invasive species (Japanese Knotweed near the old perennial garden in 2018 with minimal success, and Tree of Heaven in the Nose in 2019, success TBD); and
• Designing and installing the Legacy Trail and two connector paths (installation began fall 2019, completion anticipated summer of 2020).

4C. Challenges, Desires, Constraints, and Resources
The recommendations for ecological management at the Case Estates over the next 7 years are informed by consideration of the following questions:

• What are the most important ecological challenges to be addressed at the Case Estates in the next 7 years?
• What does the community want to see happen at the Case Estates in the next 7 years?
• What are the constraints and resources that impact what can be accomplished at the Case Estates in the next 7 years?
• Given the answers the above questions, what are the goals and priorities for the management of the Case Estates in the next 7 years?

i). Ecological Challenges
The most important ecological challenges to be addressed at the Case Estates in the next 7 years are:

• **Controlling invasive plant species:** Invasive species pose a threat to both the ecological integrity and the aesthetic quality of the Case Estates. The most egregious invasive species infestations at the Case Estates include areas of Black Swallowwort, euonymus, Oriental bittersweet, and Japanese Knotweed. See Figure 4 – Areas of Significant Invasive Species Infestations.

• **Managing fields to benefit pollinator species:** The size of the fields is not considered large enough to attract grassland birds and the interspersing of trees and paths throughout the meadows is not conducive to grassland bird habitat. The fields at the Case Estates could be more beneficial to pollinator species if the mowing regime were changed and invasive plants were controlled.

ii). Community Desires
*Case Estates Review Committee Report to Selectmen -2006*

In 2006, the Case Estates Review Committee produced a report advising the Board of Selectmen regarding the potential acquisition, future use and funding for some or all of the Case Estates property. This report recommended that:
“For now, the Board of Selectmen should manage the Case Estates land to promote good stewardship of the land provide an opportunity change in use depending on the vision of the times. Consideration of guiding principles, stewardship as well as costs should be taken into account when decisions are made on land use.”

The Committee’s guiding principles for management at the Case Estates were as follows:

1. Maintain the site in a way that is compatible with the existing neighborhood.
2. Creation of a management plan that provides the most healthy, safe, passive recreational opportunities for people while there is protection of the wildlife habitat and the environment. In a management plan for the particular property, it is especially important to consider its proximity to community resources, especially the schools. There are a wealth of opportunities for collaborative efforts in educational endeavors.
3. Insure the site blends in with the historic district and associated conservation land. Restoration of the site, if necessary, should be accomplished in such a way that it is in keeping with the character of the scenic roads and historic buildings that surround the site.
4. Retain the option to maintain parts of the sites as areas of natural open space.
5. Retain the option to maintain parts of the site for uses that contribute to the education of children and adults.
6. Retain the option to maintain parts of the site for agricultural and other horticultural purposes.
7. Maintain the buildings and land in such a way that they are not only appropriate for present and future uses but also such that they do not contribute an undue financial burden for the town.

Thomas Wirth Master Plan – 2016

In 2016, the landscape architecture firm Thomas Wirth Associates gathered public input as they drafted a Case Estates Master Plan (see Figure 10 – Thomas Wirth Master Plan (2016). The plan reflects the community’s desire to see a diverse managed landscape at the Case Estates, with a community farming operation, managed woodlands, orchards and gardens, natural habitat areas, and trails throughout the property. It also includes space for hosting events and for educational use. These uses reflect historical uses of the Case Estates, where farming, horticulture, education, and events have been underway for the past 100 -plus years.

While much of the Master Plan is a vision for the future, some aspects are achievable in the short-term and are already in progress, including:

- installing improved trail access (the Legacy Trail and connector paths installation); proposed mown paths will be discussed in the Passive Recreation section.
- planting trees per Thomas Wirth’s Planting Plan, completed in 2016 and 2017 (see Figure 5 – Plantings of Interest).
restoring the Nose: activities toward this project to date include planting of trees and shrubs; clean-up of brush, dead trees, and downed debris; and treatment of invasive Tree of Heaven. Clean-up of the stone wall and management of invasive species are needed and will be discussed in the Stonewall Maintenance section.

- maintaining open meadows – underway, with potential improvements to be discussed in management recommendations.
- some forestry operations, namely Land’s Sake harvesting of firewood from the Pine Woods in 2017 and 2018.

Stakeholder Input – 2019
In June 2019, the Conservation Commission and Mass Audubon’s Ecological Extension Service hosted a Stakeholder Meeting and an online survey to collect input for the development of this Case Estates Ecological Management Plan. Additionally, Conservation Commission staff talked one-on-one with a number of residents during this process to hear their feedback.

Desires that surfaced during the 2019 public input gathering process include the following:

Semi-Rural Landscape Character
Stakeholders reiterated their desire to maintain and enhance the aspects of the Case Estates that contribute to Weston’s “semi-rural” landscape character. The Weston 2017 Open Space and Recreation Plan defines Weston’s “semi-rural” landscape as a combination of the following elements: topographic variety with rolling hills and distant views; forests; a variety of wetlands,
and open fields. The Case Estates provides all of these elements, and stakeholders want to see these maintained in a way that is both aesthetically pleasing and ecologically responsible.

**Education, Events, and Interpretation**
Stakeholders expressed interest in figuring out ways to have programming, outings, and other events that bring members of the Council on Aging, Community Center, school populations, and the larger Weston community onto the property. Another desire was for interpretation of the natural and cultural resources of the site, using thoughtfully placed signage that doesn’t create a “crowded” feel, perhaps utilizing smartphone-friendly digital interpretation.

**Scenic Views**
In addition to general landscape character, stakeholders expressed interest in maintaining and enhancing two particular scenic views: the Nose area, which provides a view from the intersection of 4 main roads in Weston; and the Hillcrest Corridor North, which provides views from Wellesley Street up to the Pine Woods.

**Meadow Management**
Stakeholders want to see the meadows at the Case Estates managed, with varying opinions regarding what the primary goal of field management should be: invasive species management, repopulation with native field species, restoration of soils for future agriculture, pollinator habitat, bobolink habitat, and scenic value were all discussed. Some stakeholders also expressed interest in seeing the return of grazing livestock to the Case Estates fields.

**Invasive Species**
Stakeholders expressed interest in seeing invasive species at the Case Estates managed for both ecological and aesthetic purposes.

**Care of Plantings**
Stakeholders expressed interest in the care and interpretation of specimen and unique plantings remaining at the Case Estates from the Hillcrest Gardens and Arnold Arboretum days as well as of the newer trees that were planted in 2016 based on recommendations in the Thomas Wirth Master Plan.

**Trails**
Stakeholders expressed interest in seeing all of the trails shown on the Thomas Wirth Master Plan implemented at the Case Estates, not just the Legacy Trail and its connectors. There was interest in figuring out an easy, safe trail connection to 40 Acre Field (Land’s Sake) in the future as well as completing the Ash Street sidewalk so that trail users could travel from Case Campus or 40 Acre Field to the Weston Reservoir on trails. Some stakeholders preferred a more natural feel to trails rather than paved and stone dust surfaces.

**Use for Dog Walking**
Stakeholders expressed interest in restricting the Case Estates to on-leash dog use only. It was noted that the factors of having busy roads nearby; unfenced abutting land; use by the schools, families, less mobile users, and the Council on Aging; interest by some residents to of having
area in town where all dogs are required to be on-leash; and possible agricultural use all lead to this property being a good candidate for on-leash dog use only.

iii). Constraints and Resources
A number of constraints and resources impact what can be accomplished at the Case Estates over the next 7 years, including the following:

**Funding Constraints**
Funds for managing the Case Estates, as with other open spaces in town, are limited. The Conservation Commission has been tasked with the management of the property, but the needs at the Case Estate are challenging to address under the current budget and staff time. The Conservation Commission does not have adequate staffing or access to tools and equipment for conducting land management projects such as mowing, brush cutting, tree work, signage installation, and invasive species control. It must hire these jobs out to contractors, which can be both time consuming and costly. A modest budget allows for some annual maintenance work at the Case Estates, namely basic mowing and clearing of downed trees, but larger projects would require additional funding. Many projects would benefit from having access to staff laborers and equipment, such as brush mowers, weed whackers/brush cutters, chainsaws, hand tools, weed wrenches, utility trucks, and others. Volunteers could take on a more active role at the Case Estates, particularly with invasive species and trail-related projects, but supporting volunteers also requires staff time, tools, and funding.

**Dual Ownership**
Although the Conservation Commission has been tasked with land management on all of the Case Estates parcels, ultimate responsibility for the parcels is split between the Conservation Commission and the Select Board (see Figure 7 – Parcel Breakdown). This dual ownership of the property means that decisions may need to be made with approval from both boards regarding funding of projects and addressing management matters.

**Permitting Constraints**
In the AULs (see Figure 6 - Activity and Use Limitation Locations), soils cannot be disturbed without proper permitting with assistance from a Licensed Site Professional (LSP).

There are some wetlands at the Case Estates; projects conducted in and near these areas require Wetlands Protection Act permitting.

Work conducted along Scenic Roads (Ash Street, Wellesley Street, and Newton Street included) requires approval from the Planning Board. At the Case Estates, this requirement largely pertains to stone walls and removal of trees in the Right of Way.

The spraying of pesticides and herbicides on public land must be completed by a certified pesticide applicator. The spraying of pesticides along sidewalks (such as the one on Wellesley Street) is the responsibility of the Department of Public Works.
Conservation Restrictions
Two Conservation Restrictions (CRs), when complete, should be referenced before undertaking any work at the Case Estates. First, a CR will be placed on parcels 1, 2, and 6a, which were purchased with Community Preservation Act funds, as a requirement of the CPA. Second, a CR will be placed on the parcels containing the barn, schoolhouse, and Rand House in order to retain continuity of the fields when these parcels are sold into private ownership. The current intention is that the CR on these to-be private parcels will stipulate congruous management of the abutting private and municipal fields.

Other Potential Funding Sources
As property purchased with Community Preservation Act (CPA) funding, parts of the Case Estates are eligible for CPA funding for restoration and rehabilitation projects (parcels 1, 2, and 6a).

A Mass Trails grant could be sought for trail work at the Case Estates. An application was submitted for the construction of the Legacy Trail and connector paths in 2019 but was not successful at the time.

4D. Management Plan Goals
Considering the ecological challenges, community desires, and constraints and resources discussed above, the recommended goals for ecological management at the Case Estates over the next 7 years are to:

- Improve the fields for pollinator habitat;
- Reduce invasive plant infestations to minimize spreading and improve habitat quality;
- Manage field edges to retain the extents of the fields;
- Maintain stone walls for scenic qualities;
- Protect specimen trees and shrubs, including both historic and recent plantings;
- Welcome passive recreational users to the property, including users of all mobility levels; and
- Accomplish the management activities as efficiently and economically as possible.
5. Ecological Management Recommendations

Recommendations for the management areas defined in 3: Case Estates Description - the Pine Woods, the Hillcrest Corridor North, the Lower Meadow, the Nose, the Hillcrest Corridor South, the South Corner - will be discussed in this section.

Invasive species infestations will be discussed for each management area. General control measures for invasive plants can be found in Appendix A – Control Measures for Invasive Plant Species.

Recommendations for stone wall maintenance, habitat enhancements activities, passive recreational use, and specimen plantings will be discussed separately.

For many of the following management recommendations, the Conservation Commission is limited in what it can accomplish by its lack of access to labor and equipment (see section 4C(iii): Constraints and Resources). Therefore, it is recommended that the Town seeks a way to provide a staff laborer with access to Town equipment and tools to perform land management tasks on the Case Estates and other conservation areas as well.

5A. The Pine Woods

The Pine Woods is in less need of management activities and lower priority at this time than the rest of the Case Estates. Historic areas from 1938 on show this area as forested. The Future of Weston’s Conservation Land (Jordan McCarron, 2014) addresses the Pine Woods and the adjacent forests on abutting conservation and municipal forested land. Instead of management for timber, the Plan recommends that the forest be managed as an uneven-aged forest to mimic old-growth habitat conditions. Recommended management activities include:

- **Passive Management**: allowing trees to grow to their full potential and die naturally will create periodic openings in the forest; regeneration in these areas will provide important young forest habitat and enhance the overall habitat diversity on the property. Additionally, legacy trees (those 30” and above in diameter at breast height) and other large diameter individuals, which serve as seed sources for regeneration and provide cover and food for wildlife as dead snags and cavity trees, will be retained on the landscape.

- **Wetland/Water Resource Protection**: the wooded swamps, potential vernal pool, and stream frontage areas should remain protected and untouched; they provide vital water and food resources for every species of wildlife on the property. Additionally, they serve as important nesting and breeding habitat for amphibians. Finally, they protect surface water by filtering out pollutants while providing an important buffer function against flooding.
With approval from the Select Board, Land’s Sake harvested firewood from the Pine Wood in 2017-2018 and marked a small number of pines to be cut for lumber with which a new Land’s Sake farm stand will be built.

Much of the Pine Woods understory is populated with invasive Common Buckthorn and Glossy Buckthorn, and there is at least one area infested with Japanese Knotweed. See Figure 4 – Areas of Significant Invasive Species Infestations for locations. The buckthorn is so widespread that it would not be cost effective to attempt to eradicate it. The relatively small area of Japanese Knotweed could be effectively managed with some effort. Measures to control these species are available in Appendix A – Control Measures for Invasive Plant Species at the Case Estates.

5B. Hillcrest Corridor North and South
The open fields of the Hillcrest Corridor North and South have been an important aspect of the town’s semi-rural landscape for more than 100 years. Maintaining open fields can be demanding in the absence of grazing livestock and/or other agricultural uses. Vegetation on any field in New England will eventually shift to woody shrubs and then forest without some type of intervention, such as mowing, grazing, plowing, fire, or in the case of wet meadows, flooding or beavers. Mowing is usually the only feasible way to maintain an upland field in a semi-rural setting such as Weston in the absence of active agriculture activity or grazing.

It should be noted that while there are currently no grazing animals or other agricultural uses at the Case Estates, some stakeholders expressed interest in reintroducing these to the property. The reintroduction of grazing and more intensive agricultural uses, as well as identifying a third party to undertake that reintroduction, is likely to be a longer-term project for the Case Estates and therefore are not addressed in this plan.

The vegetation in Hillcrest Corridor North is currently made up of a mix of graminoids (grasses, rushes, and sedges), forbs (herbaceous flowing field plants that are not graminoids and include sunflowers, goldenrods, asters, clovers, and milkweeds), and some woody growth including a few interspersed trees and a small savannah-like forested patch with a mown understory in the southeastern corner near Wellesley Street. Black Swallowwort and Black Locust are present in the field in some locations, and there is Japanese Knotweed on its edge at one location (see Figure 4 – Areas of Significant Invasive Species Infestations).
On the southern side of Wellesley Street, Hillcrest Corridor South is an extension of Hillcrest Corridor North, but it has more trees scattered throughout as well as wetter soil. Several of these trees are in poor condition. The trees make it more difficult to mow, and limbs on the lower parts of their trunks make it impossible to mow close enough to prevent the growth of invasive plants around their bases. There is a small patch of Japanese Knotweed in one location (see Figure 4 – Areas of Significant Invasive Species Infestations). Hillcrest Corridor South does not currently have a significant infestation of swallowwort like Hillcrest Corridor North does.

i). Management and Mowing Recommendations for Hillcrest Corridor North and South

Mowing Regime
Different mowing regimes have different outcomes in terms of appearance and benefits for wildlife. For example, mowing a grass field several times over the course of a growing season – which provides a “tended” looking field - will ultimately thicken the grass component, eliminating the ability of forbs, including wildflowers and legumes, to compete and remain within the stand. Frequent mowing reduces the diversity of plant species within the grassland, which in turn reduces the diversity of wildlife foods, nesting sites, and structural diversity (protective cover) of the field. The resulting reduction in habitat diversity will reduce the diversity of wildlife and the quantity of wildlife the field can support. As the grass stand thickens, it becomes increasingly impenetrable to many wildlife species and limits their ability to forage for food or to escape potential predators.
Mowing fields only once per year is typically more beneficial for wildlife than more frequent mowing. Mowing once a year will generally suppress woody growth (although walking the fields annually to remove any woody growth that does appear is advisable). The timing of that single mow depends on management goals.

If the primary goal is to manage a field for ground-nesting bird and small mammal habitat, mowing between the end of August and October 1, with the mower set at six inches, achieves this goal. By that time, any ground-nesting birds have fledged their young and are ready to move on. Mowing before October 1 allows plants to reach enough height to provide some winter cover benefits for wildlife.

The best timing for mowing when managing for pollinators is after the first frost but before the snow falls, usually sometime between October 11 and October 20 in our region, or before first growth in late winter/early spring once the snow has melted. This timing allows for important fall food sources for pollinators, such as goldenrods and asters, to continue flowering at a time when many other flowers have ceased producing nectar.

In Hillcrest Corridor North and South, the fields will not support ground-nesting birds in their current condition (due the trees scattered throughout, size, and proximity to forest edge). The community has
expressed an interest in managing the fields for the benefit of pollinators. Mowing in late winter/early spring, after the snow has melted and the ground is no longer soggy but before first growth begins, achieves two benefits: it (1) retains thatch as winter cover for wildlife, such as small mammals and insects, and (2) allows fall flowers to serve as a food source for pollinators.

It should be noted that mowing in late winter/early spring may pose a logistical challenge. Land managers may not be accustomed to this timing and may need to shift their schedules to factor in a late winter/early spring mow. Additionally, timing is crucial. Mowing must occur in a window of time that varies widely year by year; soon after the snowpack is gone, but long enough after melting that the ground is no longer soggy, and before new spring growth starts.

The timing of field mowing has implications for invasive species management. At Case Estates, the most egregious herbaceous invasive species in the fields is swallowwort. The recommendation is to mow swallowwort in early July (see Appendix A) before it sets seed and then treat it re-sprouting plants with herbicide in August. This timing for mowing is at odds with the timing that is most beneficial for pollinators. Therefore, different regimes are needed for Hillcrest Corridor North and South.

In Hillcrest Corridor South, swallowwort is not currently widespread and no other widespread herbaceous invasive species infestation has been identified at this time. Therefore, the recommendation for Hillcrest Corridor South is to mow in early winter/late spring, soon after the snowpack is gone, but long enough after melting that the ground is no longer soggy, and before new spring growth starts. If an early winter mow/late spring mow is determined to be too challenging logistically, then mowing after last frost, usually between October 11 and October 20, is recommended because this timing supports pollinators (but does not provide as much winter cover for wildlife).

In Hillcrest Corridor North, swallowwort has spread throughout the fields and should be managed (see Appendix A). Therefore, the recommendation for Hillcrest Corridor North is to mow at the end of June or early July, as long as the swallowwort is still widespread. This will allow for better management of the swallowwort and will prevent additional seeds from setting and potentially spreading to Hillcrest Corridor South. If in future years the swallowwort is under control in Hillcrest Corridor North, the mowing regime could be reevaluated.

**Mowing Direction**

The direction of mowing also influences the wildlife using the field. Mowing from the outside toward the center has the potential to trap small mammals and amphibians in the center. Mowing from the middle and working outward allows more wildlife to have a chance to escape from the mower.
Figure 11 - When mowing start in the middle and work outward.

**Edge Encroachment**
Another challenge with field management is keeping abutting forest from encroaching into the field edges and shrinking the size of the field. As the limbs of trees seek sun, they reach out into the field and make it difficult to mow up to the edge of the field. Slowly, the area under these limbs sprout brush (often invasive species), and the field becomes smaller. Edge management was undertaken between 2016-2018 in Hillcrest Corridor North but requires ongoing attention. Edge management can be undertaken by hand tools and by mowing as close to the edge of the field as possible each year. Edge work can be faster and easier with a tractor with a mower arm (boom mower) or a brush shredder. In some cases, a tree contractor needs to be brought in to remove leaning trees.

**Scattered Trees in Fields**
For the trees scattered throughout Hillcrest Corridor North and South, several annual maintenance activities should be undertaken. Low limbs should be trimmed so that a mower can easily mow beneath the canopy. Vegetation around the base of the trees should be cut back annually by hand or with a weedwhacker; otherwise, a ring of woody growth will grow around the bases of the trees. Trees in the fields should periodically be evaluated and maintenance planned accordingly.

**Retaining Wall**
In Hillcrest Corridor North, there is a stone retaining wall between the wooded wetland at the western boundary and the open field area with a large persimmon tree and a butternut tree. The stonewall is overgrown with invasive plants, and some judicious clearing is warranted. The stone wall presents a challenge for mowing because a mower cannot get close to its edge. Weed-whacking or mowing with a walk-behind brush mower is necessary along this wall. The persimmon and butternut trees should be preserved (see section 5i: Care of Plantings of Interest).

**Summary of management recommendations for Hillcrest Corridor North and South**
Hillcrest Corridor North

- mow at the end of June or early July, as long as the swallowwort is widespread; reevaluate mowing regime if swallowwort is under control in the future
- manage swallowwort
- manage black locust
- weed-whack or brush mow along stone wall in field
- preserve persimmon and butternut trees

Hillcrest Corridor South

- mow in early winter/late spring, soon after the snowpack is gone, but long enough after melting that the ground is no longer soggy, and before new spring growth starts

Both

- weed-whack or otherwise remove brush growing under trees scattered in the fields; trim lower branches to facilitate mowing; periodically evaluate
- mow in an inward-out direction to allow wildlife to escape mower

5C. The Lower Meadow

In the field below the Overlook Site, the Lower Meadow leads down toward adjacent wetlands. The Lower Meadow is largely infested with swallowwort. In 2016, woody vegetation was removed from the Lower Meadow, and much of what established in the disturbed soil was swallowwort. In 2018, loam and seed were brought in to fill over the stumps and swallowwort in this area. In 2019, it was clear that swallowwort was re-establishing in the loamed and seeded area.
There is a patch of Japanese knotweed on the area behind the stone incinerator, where Hillcrest Corridor North and the Lower Meadow come together. It is located over a patch of rubble and therefore impossible to mow and difficult to weed-whack (see Figure 4 – Areas of Significant Invasive Species Infestations).

There is a field trail that crosses the Lower Meadow and connects to the Overlook Site (see Figure 1 – Case Estates Overview). This trail has been weed-whacked by Weston Forest and Trail Association in the past, but they have
expressed interest in handing off responsibility for this path if a contractor is engaged to mow other trails at the Case Estates (see section 5H: Passive Recreational Use).

i). Management and Mowing Recommendations

It will take concerted effort to control the swallowwort as well as a large patch of Japanese knotweed on the rubble pile behind the incinerator. While addressing these problem areas, the open fields should be mown in the same manner as Hillcrest Corridor North.

5D. The Nose

The Nose, located at the intersection of Wellesley Street and Newton Street, warrants special attention because it is so much in view as people drive by. Several trees and shrubs were planted in 2016-2017 following recommendations from the Thomas Wirth Master Plan (see Figure 10 – Thomas Wirth Master Plan (2016)). These plantings include dogwood, witch hazel, and shadbush all known for their attractive flowers and fruits and their benefits for a variety of wildlife. Some dead trees, limbs, and downed debris were removed from the Nose in 2018 and 2019 to improve the area visually and for ease of mowing.

There are several invasive plant species in the Nose, including Tree of Heaven, Oriental Bittersweet, Dame’s Rocket, and Winged Euonymus (also known as Burning Bush). See Appendix A for control measures for invasive species. The Tree of Heaven was treated in 2019 but will need follow-up treatment and monitoring in the coming years.
i). Management and Mowing Recommendations

Because of its visual importance, it is recommended that the Nose be mowed three times per year to maintain the arboretum-style managed woodland look that was intended for it during the Master Planning process. Maintenance of this area will also require ongoing removal of brush around the bases of the trees, stonewall maintenance (see section 5F: Stonewalls), and care of the younger planted trees. There are several dead or impaired trees in the Nose that may fall in the upcoming years. These trees should be evaluated and removed, and the lower limbs of the remaining trees should be removed so that a tractor can mow close enough to prevent growth of invasive plants.

Due to years of mowing, the Winged Euonymus is growing as a matted groundcover in the Nose rather than in its typical shrub form. This widespread groundcover form will be particularly difficult to eradicate and would require some trial and error if undertaken. Mowing the Nose three times per year will keep the Euonymus low and prevent it from impeding with the scenic view for which this area is being managed. However, it will continue to dominate the understory and prevent other species from getting a foothold. More intensive treatment would require foliar spraying with a multi-year approach, possible soil removal, and follow-up restoration and replanting work; this would be a larger-scale project than is considered to be achievable given resource limitations at this time.
5E. The South Corner

The South Corner, which was largely the former Arnold Arboretum nursery site, is more densely scattered with trees and has been very minimally maintained in recent years. The soil is wetter in the South Corner than on the rest of the property. Several areas in the South Corner have infestations of Oriental bittersweet and the edges of this area as well as and the bases of some trees have patches of bittersweet and buckthorn. There are many black locusts growing in this area.

i). Management and Mowing Recommendations

Having so many trees interspersed in an old field, such as is the case in the South Corner, is a difficult situation to maintain, and keeping this area from being overgrown by brush in the long run will be a resource-heavy endeavor. The trees would need to be evaluated to determine which would be beneficial to remove (black locust, impaired and dying trees, etc). For trees that remain, lower limbs should be removed so that a mower can mow under the canopy to prevent brush and invasive plant growth. Brush growing around the base of the trees will need to be removed by hand or with a weedwhacker annually along with mowing. Long-term, other options should be explored for this area, such as grazing, clearing, or allowing a natural conversion to shrubs, brush, and eventually forest (with inevitable invasive species).

There are many black locusts growing in this area; it is not likely to be cost-effective to treat these unless treatment is part of a more comprehensive plan for this area.
A view of the South Corner, June 2019
5F. Stonewalls
The stonewalls at the Case Estates are significant historic and aesthetic features and some need maintenance, particularly those along the streets that border the Case Estates (Wellesley Street, Newton Street, and Ash Street). During the years of neglect, many of these stonewalls became overgrown with brush and weeds. This overgrowth is not only an attractive nuisance but also a threat to the integrity of the stone walls. When vines and brush become rooted in a stonewall, the roots can slowly force stones apart. Accumulations of leaves and other debris can collect water inside a wall, destroying its capacity to drain properly, then prying stones apart when the water freezes.

Following the purchase of the Case Estates, brush from many of the stone walls was cleared in the initial cleanup work. This includes brush along the stonewalls at the Nose and along Wellesley Street and Ash Street. However, if not cleared every year or few years, this brush quickly regrows over the stonewalls.
Ideally, the vegetation along the stonewalls should all be cleared, with follow-up treatment in the year of clearing and then annual maintenance clearing to remove whatever re-sprouts in the following season. However, with approximately 3000 feet of stonewalls on the borders of the Case Estates alone (not including internal stonewalls), the feasibility of clearing and properly maintaining the entire extent of these walls is challenging given limited resources. Highest priority should be given to the stonewall along the Nose, the stonewall along the north side of Wellesley Street (along the Hillcrest Corridor North view, called the Hen’s Tooth Wall), and the stonewall along the connector path just south of Wellesley Street.

The clearing of stone walls can be done with hand tools and a weed-whacker, and judicious use of herbicides can improve effectiveness and efficiency. (Mowing is not usually sufficient in that a mower cannot get close enough to the base of the stone wall to remove the closest vegetation). Vines, brush, and vegetation growing on and near the base of the walls should be removed, as should accumulated debris. Roots that have had several years to establish will continue to sprout; a “cut and paint” application of herbicide may be a means of reducing this re-sprouting and cut down on both the damage being done by the roots and the time required for annual brush removal. In some cases, foliar herbicide sprays may be more effective where the cut stems are very thin and numerous. Any volunteer saplings that are growing near the wall should also be removed. Stones that have collapsed from the walls should be replaced so that mowing equipment and weed whackers can get closer to the base of the walls in the future.

After the initial clearing of the wall, 2-3 follow-up visits should be made in the first year to knock back any vegetation that re-sprouts along the wall. In subsequent years, the wall should be walked annually to remove any vegetation that has come up.

Any trees planted at the Case Estates in the future should be located far enough away from the stone walls that they won’t encroach on the stone walls as they grow or make weed-whacking and hand clearing work impractical.

Louisa’s Wall (see section 3C(ix): Culturally Significant Features) sits on private property and therefore does not require maintenance by the Town.

5G. Additional Habitat Enhancement Actions
The recommended mowing regimes and invasive species control measures discussed in this plan would enhance the habitat value of the Case Estates, both for native plant species and for wildlife. There a few additional simple habitat enhancement actions that could also be undertaken, including the following:

Nest Boxes
Nest boxes for tree swallows and bluebirds could be placed in the fields, and nest boxes for screech owls could be placed along the edges of the Pine Woods. Bat boxes could be placed in the Lower Meadow where there is access to a nearby stream. Installation and maintenance of nest boxes could be undertaken by volunteers (there is already a bluebird box monitoring volunteer program underway in Weston). See www.massaudubon.org/learn/nature-wildlife/birds/birdhouses for more information on the placement and management of nest
boxes. See http://www.batsnorthwest.org/rocketbox_plans.pdf for more information on the placement and management of bat boxes.

**Pollinator Gardens**

Further improvements could be made to the fields for pollinators by providing pollinator gardens in key locations. Such gardens could provide enhanced pollinator habitat as well as serve as demonstration gardens for homeowners seeking to learn more about pollinator-friendly gardens on their own properties. Pollinator gardens would need to be implemented and maintained by volunteers, such as the native plant garden in front of Weston Town Hall that the garden club maintains. Some possible locations for pollinator gardens include along the stonewall in the Hillcrest Corridor North, at the Overlook Site at the terminus of the Legacy Trail (Hillcrest Corridor North), and along the Wellesley Street frontage of the Case Estates. Optimal sites would need to be evaluated, with consideration of access, maintenance impacts, and long-term care, before being proposed to the Conservation Commission.

**Brush and Slash Piles**

Land’s Sake leaves brush and slash piles in the Pine Woods during their forestry operations in order to increase wildlife habitat and should continue to do so in the future. Brush piles could be placed along the edges of the Pine Woods to provide additional cover for small mammals and birds.

**Deer Hunting**

Since 2012, the Weston Conservation Commission has allowed bow hunting for deer on select Conservation Land parcels by special permits issued to trained and approved bow hunters. The purpose of this permitted bow hunting is to manage an overabundant deer population to reduce the impacts that the deer have on native plant species, forest composition, and the spreading of Lyme’s disease. There is no way to know the exact deer population of Weston; however, the evidence that has been gathered is consistent with Massachusetts Department of Fish and Wildlife estimates for this region of about 25 deer per square mile. The Commission’s goal is a population of 8 deer per square mile. The Commission could consider adding the portion of the Case Estates near the Lower Meadow, as well as adjacent municipal land and Conservation Land, to its list of huntable areas in the Deer Management Program.

5H. Passive Recreational Use

The trails at the Case Estates do not currently show on the Town’s MapsOnline GIS or the Weston Trail Map and should be added once construction of the Legacy Trail and connector paths are complete in 2020.

i). On-Leash Dog Access

Weston’s 2017 Open Space and Recreation Plan identifies conflicts involving dog walkers as a primary trail-related issue in Weston. Several popular open spaces areas in town are heavily used by people walking dogs, most notably Cat Rock and Weston Reservoir. The Conservation Commission and Animal Control Officer have received numerous requests from residents to provide a trail experience in Weston where dogs are permitted only on-leash (or prohibited altogether). This request has come from both users without dogs as well as from people who walk their dogs on leash and have difficulty when
approached by off-leash dogs. The Case Estates presents an opportunity to provide that experience, and there are compelling reasons to limit dogs to on-leash access only at this site, including the following:

- The Legacy Trail and its connectors are intended to provide a trail experience for people with limited mobility, users with strollers and walkers, elementary school students, and members of the Council on Aging. Potential conflicts with off-leash dogs are high for these user groups.
- There are several busy roads abutting the open fields at the Case Estates (Wellesley Street, Ash Street) that pose a safety threat for dogs running off-leash.
- There are several unfenced private properties abutting the Case Estates fields, where there is a high likelihood of off-leash dogs roaming from the Case Estates fields onto private land.
- As one of the Town’s newest public open spaces, the Case Estates is not yet established as a popular dog-walking location. Setting an on-leash only policy at the Case Estates fresh from the start is likely to be more effective than trying to convert another property already popular with off-leash dog walkers.

If dogs are limited to on-leash access only at the Case Estates, Weston’s Animal Control Officer recommends that only short 6’ leashes be permitted. This short leash standard is already in place on the Mass Central Rail Trail and provides for the safety of other dogs and trail users. It is also recommended that commercial dog walkers are prohibited from the Case Estates.

ii). Maintenance of Legacy Trail and Connectors
The Legacy Trail and two connector paths are currently in construction as of the writing of this plan. Once completed and in use, both the paved Legacy Trail and the stone dust connectors will require maintenance, but those needs are yet to be determined. The paths should be assessed annually for maintenance needs and funding sought accordingly.

Additionally, periodic mowing throughout the spring, summer, and fall will likely be necessary along the Legacy Trail and connector path edges to keep vegetation low and reduce the risk of ticks and poison ivy. The frequency and cost of trail edge mowing will need to be determined after the trails are complete, and a contractor to complete this mowing will need to be sought.

iii). Mowing of Additional Paths
The Thomas Wirth Master Plan (see Figure 10 – Thomas Wirth Master Plan (2016)) proposed several new paths at the Case Estates, including the Legacy Trail and connector paths, which are currently under construction. During public input gathering, neighbors on Ash Street expressed an interest in having a path mown from the stone dust connector path to a small break in the stone wall on Ash Street. This path was proposed on the Master Plan and would allow access to the Case Estates from the Ash Street/Newton Street intersection. It is recommended that the Town consider mowing this path in conjunction with the mowing of the Legacy Trail and connector path edges.

Weston Forest and Trail Association’s (WFTA) trail manager currently weed-whack trails through a number of fields on Conservation Land throughout Weston, including the trail leading from the Overlook Site through the Lower Meadow. However, weed-whacking field trails is more labor intensive than
mowing, and WFTA has expressed interest in turning the upkeep of this trail over to the Town if a contractor is hired to mow other paths at the Case Estates.

The Thomas Wirth Master Plan also proposed a path leading to the Nose, which presumably would then allow users to cross Wellesley Street to Case Campus. However, this is an unsafe crossing area and is not recommended at this time. The Town has considered reconfiguring the intersection of Wellesley, School, and Newton streets; any pedestrian crossing in this area should be worked into that reconfiguration when it occurs. Once there is improved safety at this crossing, future mown paths could connect the Case Estates more directly to 40-Acre Field (Land’s Sake headquarters). Figure 1- Case Estates Overview shows existing paths, those under construction, and proposed paths.

iv). Interpretation, Signage, and Programs
Community members expressed interest in signage and interpretive materials at the Case Estates as well as increased educational programming. These items are beyond the scope of this plan but certainly worthy of consideration. A new kiosk and some minimal wayfinding signage will be installed as part of the Legacy Trail and connectors project in 2020-2021. There is no current proposal for other formal signage at the Case Estates, but more extensive formal signage could be considered at a future date. Tree identification tags could be added to the plantings of interest on the property; this project could be accomplished by volunteers.

Temporary signage should be placed on an ongoing basis as needs arise. Some activities that would benefit from temporary signage include:

- changes to the mowing regime to help visitors understand why the fields look different (to some, “messy”) and how this benefits the ecology of the Case Estates
- the establishment of an “on-leash” only policy for dog walking at the Case Estates, to help visitors understand why this policy has been put in place
- safety and educational signage for hunting and forestry when these activities are underway
- Lady’s Slipper monitoring, nest box installation, brush/slash pile placement, and other wildlife enhancement projects

It is beyond the capacity of the Conservation Department to offer educational programming at the Case Estates at this time, but there are other entities in Weston that could offer such programming. Groups such as Weston Forest and Trail Association, the Weston Garden Club, and Land’s Sake have lead walks at the Case Estates in the past and should be encouraged to continue to do so in the future. The elementary schools, Recreation Department, Council on Aging, and other could use the Case Estates for programs on local history, natural history, wellness, fitness, and social outings.

5I. Care of Plantings of Interest
It is recommended that a horticulturalist walk the Case Estates, perhaps every three years, and provide a report on the status and recommendations for the care of plantings of interest, including both the heritage plantings of interest from the Hillcrest Gardens and Arnold Arboretum days as well as the 2016-
2017 Thomas Wirth Master Plan plantings. Heritage plantings of interest (detailed in section 3C(vii) – *Plantings of Interest* and shown on Figure 5 – *Plantings of Interest*) and considerations are noted in the matrix below.

<table>
<thead>
<tr>
<th>PLANTING</th>
<th>LOCATION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhododendron</td>
<td>Hillcrest Corridor North/Pine Woods</td>
<td>The garden is shaded and mulched by the surrounding pine forest. Rhododendrons are particularly susceptible to heat and drought, and climate change is likely to have an adverse effect in the long-term. The 2006 Horticultural Report (see Appendix E) suggested that if it was desired to make this a “...display area, it would take some work to restore and maintain, including thinning or removing some trees and saplings to let in more light.” She also recommended mowing an area then known as the “woodland glade” to “keep it looking good.”</td>
</tr>
<tr>
<td>Magnolias</td>
<td>Legacy Trail trailhead (old street tree demonstration site)</td>
<td>Check for other species when assessing these magnolias (see section 3C(vii): <em>Plantings of Interest</em> for list of other species that may be present).</td>
</tr>
<tr>
<td>Hollies</td>
<td>Pine Woods</td>
<td>These plants also nestled in the pine forest; there are older trees and many younger saplings. The 2006 Horticultural Report (see Appendix E) suggested that “the larger pines and other tree saplings would definitely need to be removed to let in more light if these are to stay.”</td>
</tr>
<tr>
<td>Butternut</td>
<td>Hillcrest Corridor North, along stone wall</td>
<td>No treatment is available for butternut canker. Early detection and removal of branches can slow its spread.</td>
</tr>
<tr>
<td>Persimmon</td>
<td>Hillcrest Corridor North, near incinerator</td>
<td>Has fruited in recent years.</td>
</tr>
<tr>
<td>Dawn Redwoods</td>
<td>Old Perennial Garden</td>
<td>May not be on Town-owned land; need to confirm.</td>
</tr>
<tr>
<td>Black Walnuts</td>
<td>South Corner</td>
<td>Some of these may not be on Town-owned land.</td>
</tr>
</tbody>
</table>

Addition plantings may be desirable at the Case Estates over the next seven years and beyond. The Weston Tree Advisory Group is often in need of locations to plant trees provided by utility companies and other sources. The 5th grade class at the Field School plants a tree each year. In both cases, the Case Estates could serve as a home for these plantings. Some possible locations to plant trees at the Case Estates include along the Legacy Trail, at the Overlook Site (to provide shade and beauty), near the overflow parking area at the trailhead to the Legacy Trail, and in the Nose (to improve the scenic quality of this area). When determining where to plant trees, consideration should be given to how the tree will impact general maintenance of the property (namely mowing around the base of the trees); access to water in the first few years as the tree establishes; and responsibility for the long-term care of the trees.

When planting trees and shrubs at the Case Estates, native species should be selected with a focus on species that provide value for pollinators and wildlife.
5J. Management of Invasive Plant Species

The extended negotiations between the Town and Harvard University resulted in a period of neglect that allowed for the proliferation of a number of invasive plant species. The most egregious invasive species infestations at the Case Estates, including Black Swallowwort, Black Locust, Japanese Knotweed, Oriental Bittersweet, Winged Euonymus, Tree of Heaven, and Buckthorn, are noted in Section 3C(viii): Areas of Significant Invasive Species Infestations. Control measures for each species will be discussed in the Appendix A – Control Measures for Invasive Plant Species at the Case Estates.

Managing invasive species demands a commitment to vigilance and some level of sustained action in perpetuity. Total elimination of invasive species at the Case Estates is cost-prohibitive, so priorities must be set to determine which infestations to address and how much control to expect. If invasive species are addressed at the initial stages of an invasion, when populations are low, the cost of maintaining a low-level of invasion will be less than the control effort required to reduce a heavily invaded area to a lower threshold of invasion. Annual monitoring for new or expanding invasive species infestations should be undertaken and new infestations addressed promptly.

Control measures vary by species and include mechanical removal by hand (i.e. pulling, mowing, and cutting) and the use of herbicides. If herbicide is used, the exact concentration, chemical, and type of application should be decided by the applicator and approved by the Town. The applicator should develop an Invasive Plant Management plan for the area to be treated and make recommendations to the Town that are best suited for the site.

Some conservation entities have experimented with using grazing goats for the control of invasive plants in fields, with varying degrees of success. Goats will graze some invasive species well but may avoid others. If goat grazing is of interest at the Case Estates, more research would be needed to determine where they would be effective and to figure out the logistics of placing and tending these animals.

5K. Management Recommendations Matrix and Maintenance Schedule

The following matrix summarizes the management actions recommended throughout this plan and provides priority levels (1 = high, 3= low) and rough cost estimates. A schedule for annual maintenance activities is also provided below.
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Priority Level</th>
<th>Rough Cost Scale</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seek means to provide staff laborer and access to</td>
<td>1</td>
<td>$10,000/year</td>
<td>Budget limitations; storage and transportation for tools and equipment</td>
</tr>
<tr>
<td>Town-owned tools and equipment for land maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Field Mowing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mow Hillcrest Corridor North and Lower Meadow at</td>
<td>1</td>
<td>$10,000/year</td>
<td>Current cost to mow all of Case Estates; need to discuss regime change</td>
</tr>
<tr>
<td>the end of June or early July</td>
<td></td>
<td></td>
<td>with contractor to determine if cost increase will result</td>
</tr>
<tr>
<td>Mow Hillcrest Corridor South in late winter/early</td>
<td></td>
<td></td>
<td>See above</td>
</tr>
<tr>
<td>spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mow the Nose 3X/year</td>
<td></td>
<td></td>
<td>See above</td>
</tr>
<tr>
<td>Change mowing direction to inside-out</td>
<td></td>
<td></td>
<td>See above</td>
</tr>
<tr>
<td>Remove dead/dying trees from fields</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Corner: determine which trees to remove;</td>
<td>3</td>
<td>$20,000-$40,000</td>
<td>Cost scale for initial work (not including ongoing maintenance)</td>
</tr>
<tr>
<td>trim branches of lower trees; cut brush at tree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bases; determine best management goal for future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stone Walls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear vegetation from overgrown stone walls and</td>
<td>1</td>
<td>$12,500/1000 feet; $37,500</td>
<td>Based on quote for section of wall near the Nose; actual cost may vary due</td>
</tr>
<tr>
<td>conduct minor repairs; re-visit 2-3 times in first</td>
<td></td>
<td>for all 3000 feet of wall</td>
<td>to specific wall condition</td>
</tr>
<tr>
<td>year to treat any re-sprouting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform annual clearing of re-sprouting along</td>
<td>1</td>
<td>$1,250/1000 feet; $3,750</td>
<td>See above</td>
</tr>
<tr>
<td>stone walls</td>
<td></td>
<td>for all 3000 feet of wall</td>
<td></td>
</tr>
<tr>
<td><strong>Habitat Enhancements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install nest boxes and/or bat boxes</td>
<td>3</td>
<td>$50/nest box $100/bat box</td>
<td>Based on volunteer installation; could also be constructed by volunteers</td>
</tr>
<tr>
<td>Establish volunteer monitoring of nest boxes</td>
<td>3</td>
<td>$0</td>
<td>Availability of volunteers</td>
</tr>
<tr>
<td>Install pollinator gardens</td>
<td>2</td>
<td>Variable</td>
<td>Availability of volunteers and donated plantings</td>
</tr>
<tr>
<td>Add slash/brush piles along field edges</td>
<td>3</td>
<td>$500-$1000</td>
<td>Possible to have Land’s Sake or volunteers undertake</td>
</tr>
<tr>
<td>Introduce bow hunting for deer</td>
<td>2</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td><strong>Passive Recreational Use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Case Estates trails to MapsOnline</td>
<td>1</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Limit dog access to on-leash only</td>
<td>2</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Quantity</td>
<td>Cost</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>----------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Establish plan for mowing Legacy Trail and connector path edges and new path to Ash Street</td>
<td>1</td>
<td>TBD</td>
<td>Cost to be determined once trail is complete</td>
</tr>
<tr>
<td>Install trailhead kiosk and minimal wayfinding signage</td>
<td>1</td>
<td>$3,000</td>
<td>To be installed with Legacy Trail; WFTA trail manager to install standard trail markers</td>
</tr>
<tr>
<td><strong>Care of Plantings of Interest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract with horticulturist for assessment of plantings of interest and care recommendations</td>
<td>1</td>
<td>$1,000-$2,000 per consultation</td>
<td>Every 3-5 years</td>
</tr>
<tr>
<td>Take on recommendations from horticulturist</td>
<td>2</td>
<td>TBD</td>
<td>Cost to be determined following horticulturist recommendations</td>
</tr>
<tr>
<td>Determine where additional tree plantings are desirable and maintenance and care plan for any additional plantings.</td>
<td>2</td>
<td>NA</td>
<td>Plantings may be available through the Weston Tree Advisory Group and the Field School 5th grade class</td>
</tr>
<tr>
<td>Tag/ID plantings of interest</td>
<td>3</td>
<td>$500-$1000</td>
<td>Volunteer availability</td>
</tr>
<tr>
<td><strong>Invasive Species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Locust in Hillcrest Corridor North</td>
<td>3</td>
<td>$1500 - $3000 for parent tree removal; $500-$1000/year for sapling treatment</td>
<td>Parent trees need to be removed; then saplings in field will need 3-4 years of treatment</td>
</tr>
<tr>
<td>Black Locust in the South Corner</td>
<td>3</td>
<td>NA</td>
<td>Likely not cost effective to manage due to extent</td>
</tr>
<tr>
<td>Black Swallowwort in Hillcrest Corridor North</td>
<td>1</td>
<td>TBD</td>
<td>Seek professional quote</td>
</tr>
<tr>
<td>Black Swallowwort in Lower Meadow</td>
<td>1</td>
<td>TBD</td>
<td>Seek professional quote</td>
</tr>
<tr>
<td>Euonymus, Tree of Heaven, Dame’s Rocket and Bittersweet in the Nose</td>
<td>1</td>
<td>$500 - $1,000/year</td>
<td>Euonymus not cost -- effective to manage. Cost here is for other species; may need 3-4 years of treatment</td>
</tr>
<tr>
<td>Knotweed by the former Perennial Garden site</td>
<td>1</td>
<td>$500 - $1,000/year</td>
<td>May need 3-4 years of treatment</td>
</tr>
<tr>
<td>Knotweed in the Pine Woods</td>
<td>3</td>
<td>$1000-$1500/year</td>
<td>May need 3-4 years of treatment</td>
</tr>
<tr>
<td>Knotweed near the incinerator</td>
<td>1</td>
<td>$500 - $1,000/year</td>
<td>May need 3-4 years of treatment</td>
</tr>
<tr>
<td>Buckthorn in the Pine Woods</td>
<td>3</td>
<td>NA</td>
<td>Likely not cost effective to manage</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place Conservation Restriction on parcels 1, 2, and 6a per CPA Requirement</td>
<td>1</td>
<td>TBD</td>
<td>Staff time and legal fees</td>
</tr>
<tr>
<td>Improve vehicle access on south side of Wellesley Street</td>
<td>2</td>
<td>$3,000 - $5,000</td>
<td></td>
</tr>
<tr>
<td>Schedule of Yearly Maintenance Activities</td>
<td>Winter</td>
<td>Spring</td>
<td>Summer</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Develop annual work plan, identify contractors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure permitting for planned projects (if required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct nest box maintenance (remove prior year’s nest material, repair boxes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean up downed trees and limbs on field edges following winter storms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk trails, assess maintenance needs, and address trail issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk fields, monitor for woody growth and remove if identified, assess field trees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undertake Invasive species management projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mow trail edges and the Nose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mow fields (late winter/early spring and end of June/beginning of July, depending on fields)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear stonewalls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear woody growth from field tree bases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor encroachments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request funding for following fiscal year’s projects</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A – Control Measures for Invasive Plant Species at the Case Estates

Black Swallowwort, Pale Swallowwort
*Cynanchum louiseae* Kartesz & Gandhi
Synonyms: *Cynanchum nigrum* (L.) Pers. non Cav.; *Vincetoxicum nigrum* (L.) Moench

A perennial vine occurring in all regions of the state in upland, wetland, and coastal habitats. Grows in full sun to partial shade. Forms dense stands, out-competing native species. Deadly to Monarch butterflies.

Pale and Black Swallowwort look very similar when not in flower. Both species have long, oval, opposite leaves (about 3-4 inches long by 2-3 inches wide). The leaves of Pale Swallowwort tend to be a slightly lighter shade of green than Black swallowwort. Flowers of both species are small and star-like. Pale Swallowwort has a pink to maroon flower with petals that have a narrow base and no hairs, whereas Black Swallowwort’s flowers are a deep purple-black and have petals with a wider base (about half as wide as they are long) and hairy inner petals. Both species produce seed pods that are 1.5” to 3” long with wind-distributed seeds inside.

Swallowworts possess a fibrous root system.

Both swallowworts are particularly difficult to deal with. As with most invasive plants, the swallowworts are ecologically threatening because they can easily dominate areas and do not allow native plants to grow. Swallowworts are extremely competitive and grow and spread quickly, out-competing native plants species. Monarch butterflies mistake the invasive plant for common milkweed, which is native to Massachusetts. When Monarchs lay eggs on swallowwort, the larvae do not survive because they are not evolved to ingest or use the toxin in either of the non-native swallowwort plants.

**Control Recommendations**

Mechanical and manual control of swallowwort are difficult due to the presence of a deep, fibrous root system. If you dig up either of these plants, try to get as much of the root crown as possible. For small stands, the plants and seed pods can be collected in plastic bags and destroyed or disposed of properly.
in a landfill before they release their seed. Collecting seed pods is not a long-term solution and may be impractical for large stands.

Mowing will not eradicate the plant but can be utilized to prevent seed formation if timed correctly. If swallowwort stands are cut too early, the plants can recover and still produce viable seed. It is suggested to mow when immature seed pods are just starting to develop and do not yet contain viable seeds. Mowing of swallowwort after seed development is not recommended as it could aid in seed dispersal. There are no commercially available insects, mites or disease organisms yet found to be effective biological control agents.

Chemical herbicides, such as glyphosate or triclopyr, may be used for control as foliar sprays or on cut stems. Recent work in central New York State has shown that applying these herbicides in late summer (i.e. mid- to late-August) to plants that have been mowed or trimmed in early July may provide the best results. The mowing of plants in early July also ensures that no viable seeds are produced prior to application of the herbicides. These chemicals work on living plants and need ample leaf surface area to absorb the herbicide to effectively kill the roots. For this reason, it is not recommended to apply them on seedlings soon after emergence. Results may be seen in one to two weeks, but repeated application may be needed.

**Tree of Heaven**

*Ailanthus altissima*

Synonyms: *A. glandulosa*

Tree of heaven is a fast growing, deciduous invasive tree that can germinate and grow in a wide variety of soil and site conditions. It can reach a height of 80 feet tall or more, has become naturalized in most of the United States, and grows in a wide variety of other habitats including, but not limited to, forest edges and gaps, grassy fields, roadsides, backyards, local parks, agricultural fields, and reclaimed surface-mined lands.

Tree of heaven has a slightly rough pale gray bark with lightly colored striations giving the appearance of “reptile-like skin” on more mature trees. Stems are chunky and yellowish to reddish brown in color. This species has large alternate, pinnately compound leaves containing 13 to 40 or more leaflets; individual leaves (leaflets) are three to five inches long and one to two inches wide, each with characteristic glandular “teeth” or bumps located at the base of each leaflet.

In suburban and woodland settings, white-tailed deer find Tree of heaven unpalatable as a food source (Fryer, 2010). Leaf unpalatability partly contributes to this species flourishing in early successional stages. In addition, it has been demonstrated that the toxic compounds from leaf decomposition (i.e. toxic leaf leachate) exhibit allelopathic effects that help Tree of heaven outcompete native plant associates in forest succession as well as in the less competitive situations of the built environment.
(Miller, 1990; Fryer, 2010). Toxic leaf litter leachate weakly, but effectively, serves this species by enabling it to compete better for space, water, nutrients, and light by inhibiting the root growth of some competing native and non-native plant species while tree-of-heaven rapidly grows.

**Control Recommendations**

Pull out easy-to-pull plants. If you can’t hand-pull Tree of heaven, then you can dig out the plant or pull it out with a Weed Wrench®. Spring or early summer cutting of Tree of heaven will slow its growth, but may not inhibit flower, fruit, and seed production. Repeated cutting of big plants or mowing seedlings on a monthly cycle will be more effective at stunting the plant and inhibiting fruit and seed production.

Mechanical controls can be done at any time during the year; however, the best times are the months before or during flowering. You don’t want the tree to produce seeds. Make sure to bag all limbs that may contain seed pods to prevent the spread of the plant. There are no commercially available insects, mites or disease organisms yet found to be effective biological control agents.

The suggested summer chemical control method is to cut Tree of heaven down to one inch from the ground in July, August, and up to mid-September and immediately apply straight (undiluted) glyphosate herbicide to the freshly cut stump using a paint brush or sponge applicator. Another recommended approach is to cut the stump high (six to twelve inches above the ground) in March, April, May, or early June and let the stump sprout. Then take advantage of interrupting the downward flow of plant compounds and cut the newly sprouted plant in July, August, or early September back to one inch from the ground and stump-applicate with straight glyphosate herbicide. This timing ensures maximum kill by the undiluted herbicide of the now weakened roots induced by the Spring cutting (i.e. the stump that sprouted using the reserves in the roots; roots have less recuperative capacity and are more susceptible to herbicide kill).
**Winged Euonymus or Burning Bush**

*Euonymus alatus*

Winged Euonymus is a shrub native to eastern Asia, central and northern China, Japan, and Korea. It was introduced as a landscaping plant as early as the 1860s. It is a deciduous shrub standing 5 to 10 feet tall with approximately the same width. Mature plants may grow up to 20 feet high.

At the Case Estates, it appears primarily in the Nose, where it has been mowed and is growing as a thick and apparently thriving groundcover.

This shrub is multi stemmed and has an opposite branching pattern. Stems are covered in 2 to 4-inch corky wings, which is a great way to identify this species, although they can be absent, especially in a shaded site. It has oval leaves, 1 to 3 inches long that turn a brilliant red in the fall. This plant can grow in full sun as well as full shade giving it the advantage over natives. Growing conditions are highly adaptable, but it prefers well drained soils. The seeds of this plant are eaten by birds then by passing through their digestive tract are viable. Seeds dispersed this way germinate easily and spread the infestation to other areas.

This shrub can form dense thickets that can prevent native species from growing. The seeds are also well liked by various bird species and can spread to areas that are not yet affected. They are hard to control because of the large amount of seed that are produced annually. The shrub was widely planted along highways and in developments for its colorful foliage in the Fall.

**Control Recommendations**

Hand pulling is acceptable for small saplings of this species, with mechanical removal and a "cut-and-dab" chemical treatment needed for larger bushes. A *Weed Wrench®* is effective for the removal of euonymus bushes. Make sure to bag all limbs that may contain seed pods to prevent the spread of the plant.

Euonymus growing as a groundcover is less common and challenging to control. Mechanical means would seem not to be effective as there are no thick stems to pull. Chemical treatment with a foliar spray may be necessary, with possible soil removal and follow-up restoration and replanting.

**Oriental Bittersweet**

*Celastrus orbiculatus*

A deciduous woody vine, oriental bittersweet can grow up to 60 feet long, with a base up to 6 inches in diameter. Its fruits are yellow-orange capsules that split open to reveal the fleshy red interior. Oriental Bittersweet is native to China, Korea, and Japan and was introduced to the United States for ornamental
uses in the 1860s. The species is often associated with old home sites from which it has escaped into surrounding natural areas.

Oriental Bittersweet is a deciduous vine with alternate, simple, obovate to round leaves with slightly toothed margins. Leaf apex has a slightly pointed tip. This invasive vine effectively utilizes nearby trees, shrubs, or any other above ground structure as scaffolding that helps it to grow upward into sunny exposures using its twining stems. As witnessed on many trees, the growth habit of this vine typically wraps around tree trunks as it grows upwards where it eventually constricts the host plant’s vascular system, thus inhibiting carbohydrate flow from the leaves to the roots and water and nutrient flow from the roots to the leaves and above ground growing points. Eventually, the host plant weakens and slowly dies from a combination of the vine’s rapid shading and vascular (phloem and xylem) constriction; branches die and break off; roots weaken, and the host tree may topple. Infested host trees are particularly susceptible to snow, ice and/or windstorms.

The combination of this species’ seed production and viability with the continuous spread by birds makes this vine an effective and efficient invader. There are virtually no appreciable predators or diseases feeding on this plant to curtail its growth, development, and spread.

**Control Recommendations**

Pull out easy-to-pull plants. If you can’t hand-pull Oriental Bittersweet, then you can dig out the plant. Attempting to pull it out with a Weed Wrench® can prove to be troublesome for many people because the woody stems have a spongy or soft construct (less rigidity) than other woody plants. Spring or early summer cutting will slow its growth and reduce its ability to form functional male or female flowers for reproduction. This species is a dioecious plant with male flowers on one plant and female flowers on another plant. Cutting down Oriental Bittersweet vines near one another before they flower disrupts an otherwise intact breeding system. In addition, the practice of repeated cutting on a monthly or so basis will be more effective at stunting the plant and inhibiting flower and fruit production.

Mechanical controls can be done at any time of the year; however, the best times are the months before or during flowering. Vines that have been cut at the base but are very large or entangled in the host vegetation should be left hanging in place for three to six months before they are pulled down. Freshly cut vines have a spongy or soft construct to their woody stems and need to dry out to become brittle enough to be easily pulled down without damaging host branches.

There are no insects, mites or commercially available disease organisms yet found to be effective biological control agents.

The application of herbicides in July, August, and up to mid-September gives maximum chemical control. These are the months that carbohydrates and other plant compounds are being manufactured in the leaves by way of photosynthesis and transported from the leaves to the roots for storage. This
downward flow of plant compounds helps facilitate the transport of foliar and stump applied herbicide to the roots during these months for more effective kill. The mechanical control of cutting or mowing is also very effective during these months for the same reason. For example, when you cut the top off any plant the roots naturally respond by pushing up more top growth (sprouting), reducing the root reserves (carbohydrates and other growth compounds) stressing the plant. Every time you cut the top off, you force the plant to sprout which reduces the root reserves and weakens the plant.

Suggested chemical control for vines too difficult to hand pull or dig during July, August, and up to mid-September is to cut Oriental Bittersweet down to one inch from the ground and immediately apply straight glyphosate herbicide to the freshly cut stump using a paint brush or sponge applicator. Roundup ‘poison ivy killer’ works very well. Suggested chemical control in March, April, May, and June is to cut the stump high (six to twelve inches) and let it sprout. Then cut the sprouted plant in July, August, or early September to one inch from the ground and immediately stump-applicate with straight glyphosate herbicide.

**Japanese Knotweed**  
*Fallopia japonica*  
*Synonyms: Polygonum cuspidatum*

Japanese Knotweed is native to eastern Asia and was first introduced into North America in the late 1800s. It was used as an ornamental plant on properties and for erosion control due to its deep and interwoven root system. Japanese Knotweed is a dense growing shrub reaching heights of 10 feet and looks like a bamboo. The semi-woody stem is hollow with enlarged nodes. Leaves are alternate, 6 inches long, 3-4 inches wide and broadly ovate. Japanese Knotweed commonly invades disturbed areas with high light, such as roadsides, stream banks and shorelines, but can also grow in full shade conditions with a high drought tolerance, a high temperature tolerance and high salinity conditions. Reproduction occurs both by rhizomes (lateral growing roots) and seeds, making this plant extremely hard to eradicate. The plant has also been known to reproduce simply from cuttings which allows for many means of dispersion.

The stands are so dense that they shade out other plant species, reducing wildlife habitat for native species. This plant is extremely hard to eradicate once established, so the key it is preventing establishment by manually removing immature clusters.

**Control Recommendations**

As noted, knotweed can regrow full plants from its cuttings as well as from its rhizomes (root structure) and seeds. Due to this capability, knotweed cannot simply be cut down but must be dug up with the
entire root structure and disposed of fully. Plants should be removed from the site and either disposed of in black plastic bags, or at the town composting facility. A "cut-and-paint" approach can be used if woody root can be exposed. Foliar spray is not recommended as it can be harmful to the surrounding plants.

**Glossy and Common Buckthorn**

*Frangula alnus and Rhamnus cathartica*

*Synonyms: Rhamnus frangula*

Glossy Buckthorn is native to Europe, Asia and North Africa and was first introduced into the United States in the mid-1800s as an ornamental. Glossy Buckthorn is a single stem or at times, multiple stem shrub or small tree that can grow up to approximately 20 feet. Leaves are glossy or shiny on top and have a dull green underside. Leaves are also alternate along branches, entire (smooth edges) to obscurely crenulate (leaf edges have small, rounded teeth). Terminal buds are brown, pubescent and have no bud scales.

![Glossy Buckthorn](image)

**Common Buckthorn**

Common Buckthorn is originally from Europe and Asia, and it was sometimes used for landscaping and hedges. Common Buckthorn is a single stem or, at times, a multi-stemmed shrub or small tree that can reach an average height of about twenty or more feet. Leaves are simple, sub opposite; they are
elliptical to ovate in shape with a weakly toothed edge. Leaf color is glossy green above with a light green underside that can be noticeably glabrous (not hairy but wrinkled). In the seedling stage, the first or primordial leaves are opposite and rectangular in shape. Buds have scales which are brownish black in color and appressed (held close to the stem); some terminal buds are modified spines.

**Control Recommendations**

Manual, mechanical and chemical means are effective in controlling glossy and Common Buckthorn and are most effectively controlled by recognizing their appearance early and removing isolated plants before they begin to produce seed. With large infestations, remove the largest seed-producing plants first. Currently no means of biological control is available for controlling glossy or Common Buckthorn. Hand pulling is effective in small infestations. Remove the entire root section or re-sprouting will occur. Weed wrenches can be very effective in uprooting buckthorn. Care should be taken to not disturb the roots of other plants. The disturbed area, now devoid of the invasive plant, may become the home for new Common Buckthorn seedlings or other opportunistic invasive plants. The seeds may persist in the ground for five years resulting in new growth.

Chemical treatment is also an option. The type of herbicide determines the best time of year to apply based on how the chemicals disrupt the biological process of the plant. Triclopyr herbicides are much more effective early in the growing season. Glossy Buckthorn retains its leaves late into the fall, so you can apply herbicide late in the season. However, the application should not be too late or the leaves will no longer be photosynthetically active (or minimally so) and will easily fall from the twigs. During the growing season, cut the stems near ground level and apply a 20%-25% herbicide mixture to the stumps. Re-sprouts should be cut and treated again or sprayed with a hand sprayer of 1.5%. Foliar applications over non-water sites can also be used. Foliar application of herbicides using a backpack sprayer is effective, but less selective.

At the Case Estates, buckthorn is primarily found dispersed throughout the Pine Woods, where it is too widespread to be eradicated with limited resources. Control measures may need to be taken if specific areas of buckthorn become problematic along trails or threaten a specific area of native plant growth.

**Black Locust**

*Robinia pseudoacacia*

A deciduous tree, black locust was brought here from the Appalachian and Ozark Mountains for erosion control and durable rot-resistant wood. It has white flowers and compound leaves, and the saplings and smaller branches of mature trees have thorns. It can grow up to 100 feet high. It invades fields, grasslands, and open woodlands. It can increase soil nitrogen levels, which threatens native plants that are adapted to nitrogen-poor soils. The long stiff thorns can easily puncture tractor tires.
Control Recommendations
Cutting alone is generally not effective at controlling this plant because of prolific stump sprouting and root suckering (when trees sprout from an existing tree’s roots). Systemic herbicides can be effective when applied to the freshly cut stumps, but you may need to monitor and re-treat in subsequent years. Always read and follow the directions on the label when using herbicide. In fields, regular mowing can control root suckers.

Dame’s Rocket
*Hesperis matronalis*

Dame’s Rocket is typically 2-4’ in height, with a bright pink or white cluster of flowers at the top of each stalk. Once flowering has completed, seeds form in long cylindrical seed pods called silique. The leaves are relatively large, up to 5” in length and broad, at widths up to 2” with serrated teeth along the leaf margins. The stem is about as thick as a pencil and distinctively hairy.

This plant is often confused with our various native phlox species. The easiest way to tell them apart is that phlox, which has five letters in its name, also has five petals per flower. Dame’s Rocket, like all other mustards, has four petals per flower. Dame’s Rocket is taller than any native phlox (which rarely get taller than 18”) and has alternately arranged leaves with toothed margins as opposed to oppositely arranged leaves with smooth margins as are present in the phlox species.

Control Recommendations
The most effective method for controlling small populations of this species is hand pulling in a manner like that of Garlic Mustard control. Uprooting the entire plant including most of its root system is critical. This species is typically better rooted than Garlic Mustard, therefore pulling is best done when the soil is very wet and/or loose. If the soil does not cooperate, a horihori, trowel, or small spade can be a helpful tool.

Dormant-season herbicide application is probably the best control method for large populations. Glyphosate (Round-Up®, etc.) can be sprayed on the overwintering rosettes in late fall after most native species have gone dormant or in early spring before native species have become active again. The temperature must be above 45 degrees, and there should not be rain in the forecast for at least 12 hours after treatment. If you wait until late spring to apply herbicide, its best
done before flowers open or early in the flowering stage to prevent seed development. Care should be taken to avoid damaging other plants in the area.
Appendix B – 2018 Update to the Board of Selectmen
Memorandum

To: Weston Board of Selectmen
From: Michael Harrity
Re: Case Estates Update to Board of Selectmen
Date: December 12, 2018
CC: Leon Gaumond, Michele Grzenda, Emily Schadler and Katie Klein, Esq.

Below is an update on the many undertakings at the Case Estates that I have been overseeing first as an elected Selectmen and, since May 2017, at your direction.

Case Estates Issues for Discussion and Decisions:

1. Update on Costs to Date and Remaining Appropriations for CPA and Municipal Accounts
   a. Details of Expenses Incurred and Paid to Date
      i. Exhibit 1 shows the parcels as described in the Town Meeting approval of the acquisition on November 8, 2006.
      ii. Exhibit 2 shows the areas clean up by Harvard prior to the town’s purchase and those areas where the deed limits the use to passive recreational activity.
      iii. Exhibit 3 shows the allocated acquisition costs including the reductions resulting from a Town Meeting approval in 2010 and the ultimate price resulting from the settlement of the town’s lawsuit against Harvard.
      iv. Exhibit 4 shows the various costs to date divided into categories. The contamination of the property by pesticide residuals and the lawsuit resulted in high costs for legal fees and environmental consultants.
      v. FYI: Parcel 8 was acquired first and separately by eminent domain.

General Fund: $14,480,000 authorization at 11/8/2006 Special Town Meeting

- $14,480,000 BAN on 12/19/2006
- $805,000 BAN Paydown (Principal Payment) on 2/1/2009
- $805,000 BAN Paydown (Principal Payment) on 2/1/2010
- $805,000 BAN Paydown (Principal Payment) on 2/1/2011
- $5,300,000 Bond on 2/4/2011

Authorized but Unborrowed: $6,065,000
Current balance: $412,333.68

CPA Fund: $8,920,000 authorization at 11/8/2006 Special Town Meeting

- $6,000,000 borrowing,
- $2,920,000 transfer from the CPA Undesignated Fund balance

Rescinded per 11/29/2010 Special Town Meeting: $1,185,887
Current Balance: $799,305.08
2. Description, Estimated Cost and Schedule for Work to be completed
   a. Seek Planning Board and ZBA approval of reconfigured parcels 4 & 5
      i. Exhibit 5 shows parcels 4 and 5 which must be sold because MASS DEP regulations will not allow their use by the Town of Weston if they are not connected to a sewage treatment plant at the Case Campus
      ii. The conservation restrictions proposed for these parcels, especially Parcel 5, will have some impact on the future sale value. Town counsel will draft these restrictions which are proposed to be held by the town when the property is sold in the future to a private or non-profit owner.
      iii. Because these are nonconforming lots, reconfiguration will require review by the Planning Board and the Zoning Board of Appeals. Parcel 5 will require a ZBA-issued special permit and reconfiguration of Parcel 4 will require a ZBA-issued variance.
   b. Establish Parcels 1 and 2 as legal lots and file conservation restrictions
      i. Town Counsel to oversee the process.
      ii. The conservation restriction for parcels 1 and 2 will be held by Weston Forest and Trails
      iii. Both of these parcels have some encumbrance from A.U.L.s which has impact on value (as reflected in the reduced purchase prices) and on the maintenance protocols. impact
      iv. See #4 below: the proposed sale of parts of Parcel 9 to an abutter has a minor and favorable impact on Parcel 2.
   c. Legacy Trail
      i. Construction documents for the proposed Legacy Trail are being prepared by Howard Stein Hudson in cooperation with the Traffic and Sidewalk Committee (T & S C) and with approval expected from the Recreation Commission. Exhibit 9 shows the Masterplan developed by Tom Wirth Associates in 2016 and Exhibit 10 shows the current status of the full plans for the trails being developed by Howard Stein Hudson. You will see that the proposed pathways are consistent with the masterplan.
      ii. The pathways on the Case Estates include 3 sections – the Legacy Trail from the Community Center to the site of the former Summer House, a connector pathway from the Legacy Trail to Wellesley Street, and a pathway from the Wellesley Street to Ash Street where it will connect with a sidewalk to the reservoir on Ash Street.
      iii. Weston 300 is to contribute to improvements to the Legacy Trail benches, pavers and perhaps funds in amounts TBD as their fund will also contribute to the Weston Rail Trail.
      iv. Funds for the Legacy Trail construction appear to be available from the Case Estates CPA appropriation but there may not be sufficient funds for the connector to Wellesley Street or from Wellesley Street to Ash Street. Does the Board of Selectmen wish to jointly sponsor a request to the CPC on January 20 for CPA funds for these pathways on the Case Estates?
v. Does the Board of Selectmen wish to weigh in on the surface material – asphalt or stone dust – for the pathways on the Case estates? We will seek input from the T & S C and the ConCom as well.

3. Future Action for the buildings on Parcels 4 and 5
   a. There remains no clear future use of the 3 buildings (Rand House, School House and barn) and 2 lots (parcels 4 and 5) at the Case Estates. No town use has been proposed. Because of the lot constraints, and the buildings’ design and condition, the market value of these properties is relatively low. A 2006 appraisal indicated that the highest and best use for each parcel is as an unimproved residential lot with the existing structures demolished.
   b. Note that the Historical Commission wishes to place Preservation Restrictions on these buildings but they have not yet established their recommendations for restrictions or commissioned appraisals to establish the highest and best use value and the diminished value due to the proposed restrictions
   c. It is not known if the Historical Commission is prepared to request CPA funds from the CPC for Historic Preservation of these 2-3 buildings at Annual Town Meeting in May 2019

4. Possible Sale of two small triangles of municipal land abutting 226 Ash Street.
   a. Exhibit #6 shows two small pieces of land that could be sold to the abutter at 226 Ash Street.
   b. Why sell? A sale resolves an encroachment from a stone retaining wall and pre-existing privately used lawn area;
   c. A sale also resolves an odd shape to the 226 property which leads the owner to maintain town-owned land as lawn – as has been done for years by the current and former owner.
   d. A fair price can be achieved by the Town and the owner would also donate funds to Weston Forest and Trails earmarked for land maintenance at the Case Estates.

5. Plans for near-term future use of the Case Estates
   a. Since parcels 4 and 5 are expected to be sold, we are planning a 10 foot opening in the stone wall on the west side of Wellesley Street in connection with the pathway there to provide access for field maintenance equipment.
   b. ConCom has hired Mass Audubon to conduct an Ecological Management Plan (EMP) for the property to help the town prioritize and address future land management (i.e. invasive species). EMP should be completed by late summer 2019
   c. Annual mowing of the fields and storm damage tree/bush removal are the only maintenance planned for FY 2019 & 2020 and the ConCom will include this expense in their FY2020 budget.
   d. Con Com will request additional funding in FY21 for implementation of the EMP
   e. There may be agricultural uses of the property in the future depending on the future buyer/user of parcels 4 and 5 especially the barn.
6. Status of Municipal Parcels 3, 6 and 7
   a. **Parcel 3** has no A.U.L. and a FY 2019 assessed value of $787,800 but it would be the access way to Wellesley Street if a future drive from Woodland School were desirable and its creation and funding approved by a future Town Meeting vote. (Note: I am not sure that this assessed value takes the slope of the site into consideration.) See Exhibit #7.
   
   b. As shown on Exhibit #8, **Parcel 6** is encumbered with an A.U.L. and is to be constrained by a 75-foot conservation restriction along its southern boundary to protect the framing, with existing mature trees and rhododendrons, of the Hillcrest view corridor which is parcel 1. This conservation restriction should be held by the town when (and if) the property is sold in the future – note: no CPA funds were advanced for the purchase of this restriction. The rough estimate for the cost of the cleanup of this lot to allow it to be developed as a single-family lot is $650,000 but that cleanup would entail significant loss of the trees and rhododendrons. The FY2019 assessed value, which assumes it’s clean and that there is no preservation restriction is $788,600. A 2006 appraisal indicated a value diminution by the preservation restriction of $145,000. So these rough or out-of-date estimates indicate that the current value “As Is” is less than $0. These estimates could be updated at a cost of about $15,000 including an appraisal (with and without a conservation easement) to get more accurate and up-to-date numbers.
   
   c. **Parcel 7** is also encumbered with an A.U.L. A very rough estimate of the cleanup of the entire 14.8 acre parcel is $3,000,000 (or more). The plan for this municipal parcel is to hold it for potential future municipal use – most likely for the replacement of one of the school buildings on the Case Campus many years from now. This would allow the existing building to be used until a new building is ready and then the existing building would be demolished and the site turned into a playing field. In this case, the clean up would be done in advance of and in connection with the construction of the new building – saving the cost of regrading and re-landscaping – and the cleanup may not be required of the entire 14.8 acres.
Exhibit 1: Case Estates Parcel Map

The 9 Parcel Plan for the Case Estates
Approved at S.T.M on 11/08/06

Parcels 1 & 2 & 6a:
to be acquired as Open Space with CPA funds

Parcels 7 & 8:
to be considered for municipal use.

Parcels 3,4,5,6 & 9:
to be sold for residential use if private funds to preserve them as open space cannot be raised.

The Case Estates Review Committee’s 2005 plan for the then Harvard-owned property, done at the CERC’s direction by landscape architect Carol Johnson, showing the “Hillcrest Corridor”
Harvard directed and paid the firm of Hailey & Aldrich to clean up the areas shown in PINK and LIGHT BLUE prior to the sale to Weston in June 2016. The process was inspected weekly by Jim Luker, L.S.P., Weston’s Environmental Consultant. The clean up was also filed with and accepted by MassDEP prior to the closing.

At the closing, the areas in GREY were encumbered by Activity and Use Limitations (A.U.L.). The A.U.L.s limit use to passive recreational uses which have minimal soil disturbance and thus do not expose users to the residual pesticides containing lead and arsenic lying several inches below the soil surface.
Exhibit 3: Allocation of the Case Estates Purchase Price

CASE ESTATES, WESTON, MA

ALLOCATION OF THE MAY 2015 SETTLEMENT PRICE AND COST REDUCTION

Compiled by Michael Harrity

<table>
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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Hillcrest Corridor North</td>
<td>18.9</td>
<td>$4,760,000</td>
<td>$(582,773)</td>
<td>$4,177,227</td>
<td>6</td>
<td>$(577,227)</td>
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<td>2</td>
<td>Hillcrest Corridor South</td>
<td>10.7</td>
<td>$3,740,000</td>
<td>$(457,893)</td>
<td>$3,282,107</td>
<td>5</td>
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<td>3</td>
<td>South ANR Lot</td>
<td>1.4</td>
<td>$960,000</td>
<td>$0</td>
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<td>1</td>
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<td>4</td>
<td>Barn &amp; School House Lot</td>
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<td>$960,000</td>
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<td>$960,000</td>
<td>1</td>
<td>$(240,000)</td>
<td>$720,000</td>
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<td>5</td>
<td>Thomas Rand House</td>
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<td>1</td>
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<td>North ANR Lot</td>
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<td>6a</td>
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<td>$0</td>
<td></td>
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<td>7</td>
<td>Pine Woods*</td>
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<td>$4,480,000</td>
<td>$0</td>
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<td>0</td>
<td>$(3,000,000)</td>
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<td>8</td>
<td>Alphabet Lane Parking</td>
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<td>$400,000</td>
<td>$0</td>
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<td>9</td>
<td>Ash Street Parcel</td>
<td>11.0</td>
<td>$5,280,000</td>
<td>$(1,137,333)</td>
<td>$4,142,667</td>
<td>5</td>
<td>$(1,142,667)</td>
<td>$3,000,000</td>
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TOTAL: 62.5 $22,500,000 $(3,000,000) $19,500,000 19 $(5,759,800) $13,740,200

C.P.A: $(1,185,667) $7,459,333 $(859,333) $6,600,000

MUNICIPAL: $(1,814,333) $12,040,667 $(4,900,467) $7,140,200

* Land with use limited to passive recreation with an A.U.L. was valued at $300,000 per acre. The value of unencumbered land is based on market comparable sales recognizing the value of buildable lots, the cost of infrastructure and the sell-off timing.
## Exhibit 4: Costs Paid and Incurred to date

**CASE ESTATES, WESTON, MA**

*Costs to Date and Other required Costs*

Compiled by Michael Harrity with account data from Susan Kelley and Charlie Young

<table>
<thead>
<tr>
<th>Category</th>
<th>CPA Funds</th>
<th>Municipal Funds</th>
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<tbody>
<tr>
<td>Nov 8, 2006 STM Appropriation</td>
<td>$8,920,000</td>
<td>$14,480,000</td>
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<tr>
<td>Rescinded at Nov 23, 2010 STM</td>
<td>($1,185,667)</td>
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<td><strong>NET APPROPRIATION</strong></td>
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<td><strong>$14,480,000</strong></td>
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<tr>
<td>Approved Debt not yet Issued</td>
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<td>($6,065,000)</td>
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<td>Acquisition Price</td>
<td>$6,600,000</td>
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<tr>
<td>Closing Costs &amp; Adjustments</td>
<td>$1,182</td>
<td>$42,905</td>
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<tr>
<td><strong>TOTAL ACQUISITION COST</strong></td>
<td><strong>$6,601,182</strong></td>
<td><strong>$7,183,109</strong></td>
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**OTHER COSTS PAID TO DATE:**

- Appraisals: $0
- Legal Costs: $83,503, $157,029
- Environmental Consulting Fees: $67,064, $236,847
- Architectural Fees: $11,000, $2,500
- Landscape Design Fees: $25,827, $33,214
- Engineering Consultant Fees: $0, $8,900
- Surveys: $17,374, $23,262
- Demolition of Outbuildings: $3,500, $7,836
- Stabilize Existing Buildings: $0, $14,677
- Environmental Clean-up Costs: $0, $260,145
- Clearing Trees & Invasives: $41,180, $13,160
- Moving & Field Maintenance: $29,040, $12,110
- Tree Plantings: $52,013, $19,238
- Legacy Trail Contract Documents: $4,464, $0
- Interest on Deposit: ($2,651), ($2,656)
- Insurance: $0, $26,659
- Miscellaneous: $903, $1,142

**TOTAL OTHER COSTS PAID TO DATE:** $333,216, $819,558

**Paid as of November 30 2018:**

- CPA Funds: $6,935,028
- Municipal Funds: $8,002,666

**CURRENT BALANCE:**

- CPA Funds: $799,305
- Municipal Funds: $412,334

**OTHER REQUIRED COSTS**

- Legacy Trail Contract Documents: $24,000, $0
- Environmental Consulting Fees: $25,000, $10,000
- Ecological Management Plan: $6,000, $0
- Legal Fees: $25,000, $25,000
- Surveys: $12,000, $12,000
- Signage: $10,000, $5,000
- Reserve for Maintenance & Repairs: $10,000, $25,000
- Other: $5,000, $5,000

**TOTAL OTHER COSTS INCURRED:**

- CPA Funds: $117,000
- Municipal Funds: $82,000

**UNCOMMITTED BALANCE:**

- CPA Funds: $682,305
- Municipal Funds: $330,334
Exhibit 5: Parcels 4 and 5

Current Lot Configurations

Proposed Lots 4 & 5 Configuration
Exhibit 6: Possible Sale to Abutter at 226 Ash Street

Ash Street side of the Case Estates with the dividing line between Parcels 2 and 9 per the 11/09/2006 STM vote

Parcel 2
Parcel 9

Revised Parcel 2 / parcel 9 dividing line

9,224 SF added to parcel 2

10,426 SF of municipal land proposed for sale to owners of 226 Ash Street
Exhibit 7: Survey showing Wellesley Street portion of the Case Estates with Parcel 3 and Roadway Easement

Existing legal lots at the Case Estates

Proposed lot configuration as per 11/09/2006 STM vote

R.A. Cameron Surveyors

Parcel 3

Access easement retained by the Town of Weston for possible future Case Campus access/exit road.
Exhibit 8:
Weston Assessor’s Map #32 including Case Estates Wellesley Street Side

Yellow hatching on Case Estates represents the approximately boundary of the AUL
Exhibit 9 – Masterplan for the Case Estates – Thomas Wirth Associates
Exhibit 10 – Howard Stein Hudson plans for the Legacy Trail and the paths across the Case Estates connecting the Case Campus to the Reservoir
Appendix C – *Arnoldia* bulletin, December 23, 1960, describing the history of the Hillcrest Gardens, Weston, Massachusetts
THE HILLCREST GARDENS, WESTON, MASSACHUSETTS

For thirty-three years, from 1911 until 1944, Miss Marian Roby Case conducted a practical school of agriculture and gardening on her estate in Weston for children of Weston and the surrounding towns. The activities of the school, with the exception of the last two years, as well as the development of the farm and bits of Miss Case's own philosophy, are recorded in the annual "green books," which thus comprise a history of the estate and a record of the land's use. The year 1960 marks the fiftieth anniversary of this farm, now known as the Case Estates of the Arnold Arboretum. The following brief history is intended as a tribute to Miss Case and a summary of a remarkable philanthropic enterprise.

Marian Roby Case (1864-1944) was the daughter of James Brown Case (1826-1907), originally of Providence, Rhode Island, and Laura Lucretia Williams Case (1833-1918), the daughter of Moses Williams of Roxbury, Massachusetts. Prior to 1909 the Case family spent the winters in their home at 468 Beacon Street, Boston, and the summers in Weston. James Case purchased the General Darby property in the geographic center of town, dismantled the existing frame house and built the well-known Case house. It was the third dwelling to stand on the property and today houses the kindergarten and offices of the Weston School system.

There were four children in the Case family, all girls: Louisa (1862-1946), Caroline (1856-1919), Mabel (1858-1888), and Marian. Mabel died in early maturity and Caroline was the only one to marry.

Following the death of her parents, Louisa inherited the Case house on Wellesley Street and lived there until 1942. Her sister Marian Roby inherited a small tract of land lying between Wellesley and Ash Streets and east of Newton Street. On this land, to become the original section of Hillcrest Gardens, was located

the Dorgan House, occupied by a gardener and dismantled in 1935. In the spring of 1909 twenty-three acres of land adjacent to the Case family property came on the market. Miss Case bought this land, including the Barker House, later known as the Williams House or the Sentinels (101 Wellesley Street) on Memorial Day, of that year. A red barn next to the house was torn down and the first rose garden was established on the filled-in cellar. These properties surrounded a small amount of land on which was the Cooper House (102 Wellesley Street). In 1910 Miss Case bought this property, renamed it Appletree Cottage for a famous set of apple trees surrounding it, and made the house her home.

The entire property was known as Hillcrest Farm, although the origin of the name cannot be determined from available records. In the first Hillcrest Farm booklet, published by Miss Case in 1911, she wrote: “Hillcrest is an experimental farm where we wish to work up the scientific side of agriculture as well as to employ boys of the town through their long summer vacation.” The land was called Hillcrest Farms until the eleventh summer (1920), when the name was changed to Hillcrest Gardens. Miss Case attributed the change of name to the influence of Charles Sargent and John Jack of the Arnold Arboretum.

It is interesting to note that Miss Case’s interest in horticulture and the development of Hillcrest Gardens never exceeded her desire to contribute to the boys who worked on the land, and, in fact, all children interested in nature.

In horticultural activities Miss Case was extremely active and used the developing gardens to this end. In the winters she frequently travelled the Mediterranean, partly for her health and partly for the horticultural interest of the area. She established many contacts in Italy, Sicily, Greece and Egypt, where she not only collected seeds herself but she had seeds of potentially useful ornamentals sent to Weston for trial. In 1924 Miss Case became a fellow of the Royal Horticultural Society and received seeds from the Kew Gardens and similar sources. She was a life member of the Botanical Society of South Africa and received many packets of seeds from that area. Hillcrest Gardens became the first spot in New England to try many South African herbaceous plants as garden annuals. In addition, Mr. Chittenden, director of the Royal Horticultural Society gardens at Wisley, was a personal friend and sent her some of the best plants grown at these gardens.

In New England her influence in horticulture extended to many areas. One of her most important roles came about as a result of her active participation in the Massachusetts Horticultural Society. Miss Case joined the Society with a life membership in 1911. In 1921 she was elected a trustee and so served for over a decade. She also served actively as chairman of the Childrens Gardens Committee. She established the Hillcrest Medals for children’s gardens and these were awarded from 1918 to 1933. In 1927, thirty-seven bronze medals were awarded to children who prepared outstanding gardens or exhibits. Other special awards or functions of the Massachusetts Horticultural Society bore the Hillcrest name,
such as a silver cup for the best collection of iris and the Hillcrest Gardens summer lectures sponsored by Miss Case. In 1926 Professor Sargent, on behalf of the Massachusetts Horticultural Society, awarded a gold medal to Miss Case with the citation, "Since 1910, Miss Case has financed and energetically conducted a vocational gardening school for boys between the ages of nine and eighteen. Equipped with this knowledge in the art and practice of raising first-class flowers, fruits and vegetables and taught to appreciate the book of Nature, these boys go forth worthy, capable and practical. Miss Case's deep love of Nature has found expression in this most useful work and in her the art of garden craft has a staunch and generous friend." Miss Case was very proud of the award and its citation and it is only surprising that she did not mention the Centennial Gold Medal of the Massachusetts Horticultural Society awarded to her in 1930 for her educational work within the Society.

Horticulture Magazine, now a publication of the Massachusetts Horticultural Society, began publication in 1920 as a weekly, privately published journal with Edward Farrington as its editor. It came under the sponsorship of the Massachusetts Horticultural Society in August 1923, and continued as a semi-monthly periodical. Apparently this magazine proved a financial burden to the Society and was the subject of much discussion at the meetings of the trustees. Professor Sargent and Miss Case were its strongest defenders, firmly anticipating its present success. Quietly, but not without official notice, Miss Case contributed generous financial support to meet its deficits. Miss Case regularly contributed articles and short horticultural observations, thirty alone in 1920, and sent many copies to her friends and correspondents abroad to make the publication more widely known internationally.

Miss Case was in close association with the Arnold Arboretum and the Botanic Gardens of Harvard University. She received many plants from the Arboretum for trial in Weston and today some of the outstanding specimens of plants introduced to American Horticulture by E. H. Wilson of the Arboretum staff are growing on the Case Estates. Miss Case was appointed a member of the Overseers Committee to visit the Harvard Botanic Garden in 1922, and in 1924 she sponsored a private viewing of these gardens. Tea was served and over 4000 invitations were sent, of which 3000 were accepted. Elsewhere in the Boston area the Benevolent Fruit and Flower Mission received her support with regular contributions of cut flowers and plants.

Miss Case was an active member of the Woman's National Farm and Garden Association and served in many of its offices, including that of president in 1927–28 when this national organization met at Hillcrest.

In Weston her generosity found many avenues of expression. She was an active member of the First Parish Church, Unitarian, and many benefits were held at Hillcrest Gardens for this parish. In the same manner she supported the Society for the Prevention of Cruelty to Children. Likewise the local school system re-
ceived her attention. She offered prizes for the best essays written on topics which she suggested. Prizes were offered from 1921 until 1932. In the latter year forty-two prizes were awarded (generally books of poetry) in grades seven through twelve. She was an active participant in the Weston and Wayland Grange and for at least one year (1929) was president of the Wayland Garden Club.

The school at Hillcrest Gardens received her constant attention. She personally selected the boys and watched their work and development, keeping in touch with them even after they had left Hillcrest. As one student wrote in 1913, "It seems to be a settled policy with Miss Case that when a boy has entered the work here and as long as he continues here that he is never out of her reach." Miss Case personally selected many of the leaders from among the boys, encouraged the development of others and disciplined those who needed it. During the school term she met with the boys in study periods to watch their work and regularly took a period each week to read to them from the works of challenging authors. No summer was complete unless Miss Case read to the boys Sill's "Opportunity," Longfellow's "Fiftieth Birthday of Agassiz," Lowell's "Vision of Sir Launfal" and Wordsworth's "Happy Warrior." Others of her favorite readings included Van Loon's "The Story of Mankind" and "The Americanization of Edward Bok."

Although there was no lack of applicants from whom Miss Case might select boys for her school, she reported on at least one occasion that her "chief trouble has been to find a man to take charge, who liking boys knew something about agriculture or a man wide in farm knowledge who would have patience with the boys." Three men of her choosing, Thomas Park, Jack Williams and Dennis Crowley, were largely responsible for the signal success of Hillcrest as a school for boys.

Each summer began with having pictures taken of the boys. These pictures hung on the wall of the clubhouse throughout the summer. One year Miss Case wrote, "One boy coming into my studio to have his picture taken asked me if I thought he had grown since last summer. I was able to tell him I thought he had grown in everything that makes a boy worth while."

Today many of these same graduates a number of whom still live in Weston, speak with pride and pleasure of the influence of Miss Case and Hillcrest on their youthful years.

Since Hillcrest was a truck farm, it operated in competition with other farmers in the area. But the income from the produce grown at Hillcrest never equalled the cost of the school and Miss Case's many horticultural philanthropies. The wages paid to the boys were low and perhaps for this reason Miss Case feared criticism. In several of the "green books" she questioned the appreciation of the townspeople in Weston for her efforts. In 1917 she wrote, "Sometimes I wonder if the good people of Weston who buy these vegetables at low market prices
delivered to their doors, ever stop to wonder who pays for raising them and the
berries, plums, apples and peaches which three times a week are sent around
town." There follows a bit of homely philosophy in which she musingly writes
of herself in the third person, "She can have boys trained to teach other boys
to grow food for the people. Is she willing to pay the cost? She needs the in-
terest and appreciation of her neighbors." This appreciation came shortly after
the publication of the booklet in the form of a petition signed by sixty-four of
her neighbors. It read, "The accompanying petition will, I hope, assure you how
greatly Weston people appreciate Hillcrest Farm. We the undersigned desire to
express our appreciation of the service rendered to the townspeople during the
past by Hillcrest Farm and to request that its products will continue to be dis-
tributed in Weston." The boys, however, needed no encouragement to express
their appreciation. They wanted to work successive summers and one was finally
told, after twelve years, that he should seek employment elsewhere for his own
benefit. The following year, however, he returned to be in charge of the boys.
Another reported, "The selling of the produce brings the boys in contact with
the customers and is very instructive to them. It is one branch of the farm work
which gives the boys a good business training and also helps them to develop
patience and tact as they meet so many different kinds of customers."

The Land and its Buildings

The land comprising the Hillcrest Gardens was purchased by Miss Case in five
pieces, supplementing her original inheritance of land. The first purchase in 1909
was twenty-three acres and included the Williams house. About 1910 Appletree
Cottage was purchased and in 1912 an additional forty-six acres known as the
Milton lot was added. This included the Milton house and garage and an old
gray barn, later dismantled. In 1916-17 the five acres between Wellesley Street
and Ash Street known as Crosslots were purchased from the Hastings family and
brought under cultivation. Apparently the Hastings House at 131 Wellesley
Street was included in this purchase. The final purchase, another five acres be-
tween 137 and 163 Wellesley Street, contained a pine woods and a large swamp
and was purchased to screen Hillcrest from the real estate development along
Chestnut Street.

The first summer at Hillcrest was spent clearing the rather poor farm lands of
rock and pruning the neglected apple and peach trees. Large boulders were
hauled to one side and used to make two outstanding examples of the wall builders' art. The large, freestanding wall, ten feet high, six feet thick and 200 feet long is the longest of its kind known in New England. The inspiration for such a wall came when Miss Case, on a visit to Tokyo was deeply impressed with a vista "where pines towered over grey stone walls," as they were to do at Hillcrest.

The clubhouse, now 133 Wellesley Street, was under construction as a private
residence in Crosslots when purchased by Miss Case in 1914 and moved to its
present location, formerly the site of a "yellow barn." A bell cupulo was added and in 1927 the large veranda was constructed. The second floor of the clubhouse was partitioned to accommodate a toilet and a darkroom for the boys' use. The first floor was used as a display and sales area for produce and the second floor, with its dias, served as a study hall and classroom. During the many benefit open houses held at Hillcrest, the veranda was used for serving lunches and teas, and as a platform for instrumental or choral groups.

Another item constructed from native stone was the large incinerator built in 1924 to the rear of 137 Wellesley Street. Brush and debris from the farm was burned in this massive structure to secure ashes for fertilizer.

The large yellow barn at 135 Wellesley Street was started on the 18th of April, 1927, and was dedicated in the late summer with a reception for the National Farm and Garden Association and later with the Labor Day exercises. The barn, designed by Samuel W. Mead of Weston, and constructed by William Kellar, was an outstanding structure for its time. The cold rooms for storage of fruits and vegetables and the special facilities for storage of manure were advances in design.

Throughout her travels, Miss Case accumulated figures or objects of art for inclusion in the garden. A few of these remain, such as the Italian bird tiles built into the cellar window of an old barn and now seen next to 133 Wellesley Street. Some were commissioned by Miss Case, such as the painting representing Demeter and Triptolemus by Alberti Angeli of Florence, Italy, which was hung on the wall of the clubhouse. A special stone settee with a wrought iron back bearing a design of two Hillcrest boys in uniform and an oval spray of roses and pansies, as well as an iron chain of 250 links can still be seen next to 101 Wellesley Street near the ground cover display.

Two concrete benches, copies of an original built by Russell G. Crook of Lincoln in 1921, feature Puck playing with a goat and some Byzantine birds. One of these benches is in the perennial garden and the other is between the yews near 101 Wellesley Street.

The Farm and the Gardens

From the beginning, Miss Case maintained high standards based on her broad knowledge of gardens in many parts of the world. The Hillcrest farm and gardens, she felt, must be outstanding in every way and she would tolerate no lesser aim. The original land purchase consisted of neglected agricultural land. Subsequent purchases, increasing the land area to 100 acres, added not only more agricultural land, but also a forest and a swamp. By 1917 approximately twenty-five acres were under cultivation and in 1930 there were forty acres of crops and gardens. Every year, as a result of her many contacts and memberships, Miss Case received new seeds or plants for trial. These were carefully tended and regular reports were sent to official sources when these were required. The first introductions mentioned were three rows of espaliered fruit trees im-
PLATE XIII
Aerial photograph of the Hillcrest Gardens, June 30, 1930. The barn and the clubhouse are in the center of the picture. Behind them the many beds of flowers, fruits and vegetables. The vineyard is in the upper right hand corner and the peony garden in the lower left. Photo by Fairchild Aerial Surveys, Inc.
ported from England in 1910 and grown on trellises near the big stone wall. An interest in native herbaceous plants culminated in the development of a woods garden and special attention was given to the selection of seed from the best of the New England wild flowers or berried plants such as blueberries and blackberries. These selections were distributed in exchange for seeds from other sources.

Much of the produce was custom grown. When townspeople expressed interest in a particular fruit or vegetable or in a certain variety, Miss Case often obtained these seeds or plants and the produce was soon supplied. Many grape varieties were reserved for special customers. The old apple and peach trees on the original land formed the first produce offered for sale, but expansion was rapid. In 1914, 800 grape plants were purchased and the famous vineyard of forty varieties became productive in 1916. Wild blueberries were picked from the land and the best plants were dug and brought under cultivation. In the early years Miss Case offered a prize to the boy who found the first plant producing blueberries the size of a dime. Such a plant was not found at Hillcrest, so the prize was offered to all members of the Massachusetts Horticultural Society and in 1931 was finally awarded to Mr. Albert C. Burrage. Anticipating a market among the people of Italian descent, Miss Case introduced plants of European dandelions. In 1918, partly due to the wartime need to produce foodstuffs, Hillcrest had sixty varieties of vegetables under cultivation. Notwithstanding this effort to produce vegetables in quantity, the school proudly maintained its high standards of quality, as is attested by the many awards received for its fruits and vegetables. Ninety-seven awards and votes of thanks were received from the Massachusetts Horticultural Society in 1920 and fifty-two awards were received at the Weston Grange fair in 1922.

Hillcrest Gardens used the latest methods of cultivation and followed closely the agricultural developments of the day. Both surface and overhead irrigation was used, the Skinner overhead system being tried there for the first time in Massachusetts. The animals of the farm supplied manure, but chemical fertilizers and sprays were also employed generously. The original horses and plows gave way to the first Fordson tractor in the Weston area in 1920 and that to the Rototiller and Farmall tractors in 1933.

Originally the produce was sold to residents of Weston but deliveries to Waltham and Boston proved even more profitable. A bicycle express provided delivery service in Weston in 1911 while the Hillcrest team and wagon carried produce to greater distances. A Ford truck replaced the horse and wagon in 1918. By the year 1918, produce was sold at the farm, though deliveries were still made twice a week to Waltham and Boston and three times a week in Weston. However, in 1920 Miss Case noted that it was no longer necessary to make commercial deliveries, for merchants were willing to come to the farm for the fruits and vegetables. In 1921 a Hillcrest teahouse and market was started in a yellow barn
near the village smithy in Weston center. A woman was hired to run the tea-house with the help of the boys from Hillcrest, who also operated the stand. The teahouse and market operated until 1933. After that all produce for Weston was sold directly to a local market.

To Mr. John Wister, who came to Hillcrest as a lecturer to the boys, and to Mr. Arthur Williams, belong the credit for the horticultural developments at Hillcrest Gardens. After Mr. Wister’s first visit he sent to Miss Case a number of *Iris versicolor* varieties for the swampy areas at Hillcrest. In 1923 Mr. Wister spent most of the summer planning the roads and paths, the special woods gardens and a test garden for the American Iris Society. He also made a catalogue of all the ornamental trees and shrubs under cultivation and suggested that a peony garden be established. Thus, in 1924 between 500 and 600 iris cultivars were planted in approved form next to Appletree Cottage and in 1925 an old potato patch was replanted to peonies. The woods garden was established the following year and the spring garden in 1931. By 1934 the iris garden, having outgrown the existing beds, was replanted with over 700 cultivars. Mr. Williams and his family came to Hillcrest in 1922 and his deft touch with plants, together with his constant search for better cultural methods produced the outstanding horticultural specimens for which Hillcrest became known.

Hillcrest Gardens flourished in the 1930's, but on the afternoon and early evening of September 21, 1938, a disastrous hurricane swept through the area. Much damage was done to the fine specimen trees on the grounds, many of which stood alone without the protection of mass plantings. In the orchards seventy-four large apple trees and twenty-nine other fruit trees were destroyed. The woodlands behind the gardens were severely hit and the Sentinels, those famous pines standing guard behind the high stone wall, were toppled. In the forest 2500 pines, some exceeding three feet but all averaging at least eighteen inches in diameter were felled, as were 500 oaks and 250 maples. Many trees and shrubs in the garden were hauled erect and staked into position but many others were lost. During the winter months the woods were cleared and logs salvaged from the tangle which nature had created. The government established a saw mill in Wayland and by team, truck and tractors, logs from Hillcrest were hauled to the mill. The resulting 130,000 board feet gave ample evidence of the hurricane’s destruction.

The Boys at Hillcrest

During the first summer at Hillcrest in 1910, six boys were hired to help on the farm. This number was increased to eight the second summer and to eighteen in 1912. Twenty was the maximum number enrolled in the school. Originally, Miss Case planned to divide the boys into two groups according to age, a younger group which would work mornings only and an older group to work all day. Work began at Hillcrest in the middle of June, after the close of the public schools and at a time when the strawberry crop was ready to be picked. During
the early years the boys were all photographed individually and, foreshadowing the group health plan later to cover all Hillcrest employees; all received a physical examination from Dr. Wood, a family physician of Weston. In 1911 each boy was supplied with two khaki "uniforms," consisting of a Norfolk jacket with the Hillcrest emblem on the left sleeve, the Hillcrest hat and a tie. By 1937 the uniform had changed to two green sweaters, one for dress, each with a gold felt shield bearing the name "Hillcrest" in green letters, and a green tie.

At the first assembly of the season Miss Case presented each boy with a diary in which to make daily entries of the weather and of his activities. Pencils and notebooks were also supplied for his drawings and observation papers and the notes to be taken for the required Labor Day paper. Then Miss Case outlined what was expected of the boys in diligent work habits on the farm and in their studies. For the first several years the boys worked from eight in the morning until noon and from one to four-thirty in the afternoon with two half-hour recesses and on Saturdays from eight until noon. A one-hour lecture was given on alternate Mondays and the boys prepared a program of entertainment for themselves on the intervening weeks. On Wednesdays there was a study hour of drawing or reading and on Fridays Miss Case read or heard the boys read or speak. Eventually the educational aspects became more significant under the guidance of the various men in charge of the school. For the greater part of its existence, the school consisted of one hour a day for drawing, reading or study, with a program featuring a guest lecturer one full afternoon each week and an earned outing on Saturday afternoons. The younger boys drew leaves, the older ones flowers and whole plants. At one time the younger boys studied agriculture and farming, the middle group studied botany from Gray's "How Plants Grow" and the older boys studied from Bailey's "Nursery Book." Bird identification was an important part of their education and one boy made a list of sixty-five different birds observed at Hillcrest in the summer of 1918. Elocution lessons were offered at times under the direction of a Mr. Gifford of the Emerson College of Oratory, who gave the boys regular "vocal calisthenics." Observation papers were required and the best were published in the green books.

Discipline was strict, enforced by the teachers and by Miss Case herself. A system of demerits was imposed for infraction of rules and the boys with most demerits were threatened with being dismissed or with being ineligible for employment the following year, yet no boy was ever guilty of sufficient infractions for either of these punishments. On the other hand, good work was rewarded with Miss Case's praise and prizes of photographs, books or money.

The chores for the boys were varied. The clubhouse must be kept clean; the vegetables and fruits must be picked and washed for market and peddled from door to door; the donkey needed care; the barn must be swept and the vegetable and flower garden must be weeded.

The outings during the year were eagerly anticipated, reported upon and long
remembered. When the first motor car was bought, a ride to Concord, Salem, Sharon (Moose Hill Sanctuary), the Navy Yard, Franklin Park, Waltham Field Station, Benson Animal Farm, East Boston Airport, Walden Pond, the Proctor estate, or even a trip to Boston to see Buffalo Bill, rewarded the boys, yet combined education with pleasure.

An annual all-day picnic was also held for all of the boys. The favorite spot was Paragon Park at Nantasket, but one trip to Hampton Beach was timed so that the boys could see an eclipse of the sun.

Extra activities found their way into the program as well. Eager to march in the parade celebrating Weston’s 250th anniversary, the boys formed a marching unit complete with drums made of cheese boxes with paper-and-curtain heads. Later Miss Case bought six snare drums, a base drum, eight fifes and a pair of cymbals for the unit, so impressed was she with their efforts. During the period of the First World War, patriotism became the motivating force at Hillcrest. The boys collected money from door to door to have a plaque placed in front of the library during an appropriate ceremony. The need for growing and conserving food was impressed on the farm boys, who labored long and hard to grow good crops. One kitchen on the farm was devoted to canning. Jars were solicited and finally purchased by the carload and during 1917 over 900 jars of fruits and vegetables were preserved to meet an anticipated food shortage in the winter. Since vegetable seeds were difficult to obtain, the Hillcrest boys saved seed from their crops in 1918 for the following season and made available the surplus to others.

For these and similar efforts the boys received wages. In 1911 Miss Case thought that one dollar a week for the younger boys and twenty dollars a month for the boys working full days was appropriate. By 1925 the standard was ten dollars a month, increasing five dollars each month for each year’s service to a maximum of twenty-five dollars. In addition, the boys received produce from the farm. Few there were who went home empty-handed. Only during the depression year of 1933 did Miss Case find it difficult to finance the farm. This was reflected by more stringent rules of behavior and a decrease in the maximum wage to twenty dollars. While most of the boys were from Weston in the early years of the school, boys were accepted from adjacent towns and a few came even greater distances. Miss Case insisted that applications come from the boys and not from their parents. Most boys commuted to the farm every day but a few boarded at Hillcrest. For this they were charged $8.50 a week while earning $10.00 a month. Obviously there were parents who recognized the value of this unique training ground and were anxious to give this opportunity to their sons. Yet rarely did the farm meet its expenses. Hillcrest and its school proved to be one of Miss Case’s many charities.

Perhaps one of the best known activities of Hillcrest Gardens was the summer lectures, generally held on Wednesday afternoons. The clubhouse was swept and an attractive display of flowers, fruits and vegetables were offered for sale on the
first floor. The local papers and the magazine *Horticulture* announced the speakers who were outstanding men in science or in public life. Special groups from settlement houses, the Perkins Institute, the garden clubs or churches and schools were often invited. These lectures, six each summer, were offered from 1911, when the speakers were William F. Denton (butterflies), F. W. Barret (bees), B. F. McDaniel (soils), Wilfrid Wheeler (apples), W. G. Kendall (grapes) and John T. Nichols (birds) until 1941 when the speakers were the Reverend Miles Hanson, Jr. (English composition), E. D. Merrill (Romance of Plant Names), Harold S. Tiffany (Propagation of plants), the Reverend Waitsill H. Sharp (Meaning of German occupation in Europe), Charles F. Whitney (Lore of North American Indians), Lawrence B. Fletcher (public reservations), A. B. Stout (The Plant Breeders Work), Edmund Mezitt (Edible and ornamental berries) and Ernest Little (Use of chemistry on the farm). During these thirty years, 115 men, including college presidents, outstanding scientists and former Hillcrest boys, appeared on the lecture programs. Remunerations up to $100 plus expenses made the trip worthwhile for the speakers and indicate Miss Case's generosity and interest. As she expressed it, "In order that we may keep in touch with the best work that is being done in agriculture and also interest the boys in nature, we have had lectures through the summer by specialists."


The summers ended on Labor Day with annual exercises. To these the parents and neighbors were invited. The boys marched up the stairs to the second floor of the clubhouse led by the oldest or the most outstanding boys carrying the American flag and the Hillcrest flag and singing America. The American flag was presented to Miss Case who held it while the audience joined in the singing. This was followed by the pledge of allegiance. The Hillcrest school song was sung and the program introduced by Miss Case. She announced the names of the judges who would decide on the best papers to be read by the boys and the prizes to be awarded for work during the year. Each boy then read his paper and when all were done Miss Case presented first the Hillcrest pin to those boys completing with distinction their first year at Hillcrest and then the Semper Paratus pin bearing the motto of the school, to the boys of three or more summers. Then the prizes were awarded for the best papers read that day and finally the prizes for work during the year; for the best work in the field, in the study hour, the best report of the lectures, the best drawings, observation papers, the
wild flower collection and the bird list. During one year fifteen of the eighteen boys on the farm received prizes. In such a manner Miss Case won the hearts of the boys.

Following the exercises the boys returned home. A few worked on the farm on Saturdays into the fall and for several winters Miss Case had Saturday or vacation work or classes for the boys who wished to attend. Classes in woodworking and weaving were offered at one time and during the First World War, a class in first aid.

During the winter Miss Case usually travelled to the Mediterranean. She found time, however, to edit the reports of the boys and to publish the annual green book, to order seeds and to plan the gardens, to correspond with former Hillcrest boys and to select the ones for the coming summer.

The End and a New Beginning

During 1939, the thirtieth anniversary year of Hillcrest, Miss Case was seriously ill. The summer followed its usual course with twenty boys employed on the farm, fourteen of them having worked previous years. The Labor Day exercises were special, however, for all former Hillcrest boys were invited to return for a reunion or to send greetings. The group gathered at noon for a luncheon, the birthday cake, and special speakers. Dr. E. D. Merrill spoke, as did Thomas Dooley. A roll call of former Hillcrest boys, with responses, was followed by a talk by John Wister on the future of Hillcrest.

Mr. Wister considered the possibilities of continuing Hillcrest to meet the goals which Miss Case had established in 1909 and maintained to that day. He dismissed the suggestion that the land become a park for the town of Weston or even a part of the Boston Metropolitan Park System. Instead, he expressed the hope that some organization such as the Massachusetts Horticultural Society, Harvard College, Wellesley College, or perhaps the state university at Amherst might be able to continue to do the "research work in various fields connected with flower gardens." Mr. Wister, recognizing the improbability of continuing the school, pointed out that "We cannot lay down exact programs for the future. All Miss Case can do is to express her wish that her present work should continue. She and all of us must trust to the intelligence and good faith of the person and organizations who may take over the work here. If they follow the spirit of the founder, there will be many years of usefulness ahead for these gardens started in 1909 by Miss Marian Roby Case." Mr. Wister's talk is published in the green book of 1939.

Hillcrest Gardens and School operated through 1942. On July 4, 1944, Marian Case died. Having determined that the Massachusetts Horticultural Society did not feel capable of operating the estate, she bequeathed the property to Harvard University for the purpose of the Arnold Arboretum.

In this decision, her sister Louisa's influence is shown. Louisa Case was interested in maintaining the family property intact. In 1942 she gave to Harvard
University $50,000 and some fifty-nine acres of the original Case property, including her residence in Weston, as a memorial to her father, James B. Case. Perhaps the family relationship to President Lowell influenced her in this direction. Perhaps, too, Marian Case felt inclined to follow her sister's lead since, having been on the Visiting Committee for the Arnold Arboretum, she knew something of its needs. In any case, both bequeathed their properties to Harvard University, with endowments to maintain the land.

The two pieces of property, nearly 200 acres, were accepted by Harvard University for the purposes of the Arnold Arboretum and were called the Case Estates of the Arnold Arboretum. Almost immediately Harvard University was approached to release a portion of the Case lands to the town of Weston for the purpose of new school construction. Miss Louisa Case, who outlived her sister Marian, was consulted and by agreement, to avoid eminent domain suit, Harvard sold to the town 43 acres, including the original Case mansion, a barn and extensive ranges of greenhouses. In 1957 the town again required land for a program of school construction, and this time, by an eminent domain suit, another 32.5 acres, mostly land bequeathed by Louisa Case, were lost to Arboretum purposes. The current use of the remaining 110 acres has been described in other issues of Arnoldia (16:9-16, 53-59, 1956; 18:41-44, 1958).

The land is used principally as nursery and testing areas for the new plant introductions of the Arnold Arboretum. The Case Estates, offering both room for the growth of such plants and more rigorous environmental conditions than those prevailing in Jamaica Plain, serve this purpose admirably.

Many acres, as well as smaller, casual plantings, are devoted to species of less ornamental value and are grown there permanently so that records of the species may be maintained for future taxonomic studies and for breeding programs. Many other acres of land have been devoted to long-range growth studies of trees. The wooded areas serve as natural zones of vegetation for use of classes. Special display plantings of ground cover plants, shrubs for perennial gardens and small street trees have been established. Large areas have been landscaped for the enjoyment of visitors.

The Case Estates remain open to the public, even as did Hillcrest Gardens, but there could be no Hillcrest School without the vibrant personality of a Miss Marian Case. A few high school students are employed each summer and college students, carrying on graduate research programs, continue Miss Case's goal of scientific leadership in the fields of agriculture and horticulture. Hillcrest Gardens established a standard of excellence in the years of its existence from 1910 through 1944 which we hope the Case Estates of the Arnold Arboretum may successfully maintain.

Richard A. Howard
Appendix D – Weston Conservation Commission Conservation Land Use Policy and Regulations
MISSION STATEMENT
The Weston Conservation Commission shall endeavor: (1) to preserve open space for the enjoyment of the community; (2) to protect water, land, animal and plant natural resources for the health of the environment; (3) to manage Conservation Land in a sustainable manner; (4) to educate the community about natural resources and the role of human stewardship; and (5) to encourage community participation in town conservation issues.

Conservation Land Regulations
The following Rules and Regulations are intended to ensure that the conservation lands are managed and maintained in accordance with the requirements of the Conservation Commission Act (M.G.L. Chapter 40, section 8C) and the Mission of Weston’s Conservation Commission (WCC). For the purpose of this document, “conservation land” is land under the jurisdiction of the Conservation Commission. Generally, the WCC allows, on conservation land, activities that do not harm natural resource values and functions and do not interfere with natural resource processes, wildlife, wildlife habitat, or passive public enjoyment of the land. Generally, activities that harm or interfere with these values, processes, or passive public enjoyment are prohibited. Activities that may promote certain of these values, processes, or passive public enjoyment to the detriment of other values, processes, or passive public enjoyment shall be evaluated and allowed if the WCC determines that the activity serves some overriding public interest. The Conservation Commission may undertake or contract with others to undertake all necessary management actions.

These Regulations may be made more restrictive for any specific parcels as deemed necessary by the WCC for the protection of the natural resources and the safety of the public. With regard to a particular proposed use, the WCC will evaluate the compatibility of the use with the WCC Mission Statement, these regulations, and the impact on wildlife and abutters.

Agriculture
Agriculture is a large part of Weston’s past. Many conservation lands include former pasture and crop areas. Several parcels of conservation land were purchased by the Town for the purpose of continuing its agricultural traditions and maintaining the Town’s historic character. Therefore, the WCC may periodically enter into “license” agreements with farmers for the purpose of keeping historic fields in continued agricultural use. Any fields licensed for farming will include the requirement that the farmer must permit public access to the land around the perimeter of the fields during the growing season and throughout the property outside of the growing season.

Forest Management
Much of Weston’s conservation land is forested. A forest management policy has been implemented on select conservation land parcels to meet the following four goals: ecological protection, education, recreation, and wood production. Harvesting of trees for firewood and timber makes use of valuable renewable resources. By selection cutting and careful management, the Town’s forests will be more productive in the long run and will also provide diverse wildlife habitat. WCC may enter into contracts with
organizations who will work with the Town to file appropriate Forest Cutting Plans with the State to allow for harvesting trees for timber and firewood on conservation land.

Section I. GENERAL INFORMATION FOR USING THE TRAILS

The conservation lands of Weston are open to the public for recreational use without charge or special permit unless otherwise indicated in these regulations. Users should observe the following:

A. The trails which are open to the public for recreational use are identified by white trail markers with a tree symbol and the letter “W”. Paths that are unmarked are generally private and not for public use.

B. In case of an emergency, call the Weston Police at 911. For non-emergency communications, please call the Weston Conservation Commission at 781-786-5068.

C. Most of Weston’s conservation trails are for multiple uses. Depending upon the season, users may encounter walkers, runners, horses, dogs, bicyclists, skiers, snowshoers, and farmers using equipment. Please respect other users.

D. Bicyclists should be mindful of the following:
   1. Bicyclists should stay on the fire roads as shown on the Trail map.
   2. Bicycle riding is discouraged on hillsides or in wet weather when the ground is soft.
   3. Bicycle riding can be dangerous; riders should be courteous and attentive to other trail users.

E. Dog Walkers must comply with Weston’s Dog Bylaw which requires that:
   1. Dogs must be leashed or under voice control at all times;
   2. Commercial dog walkers must get a permit at Town Hall which allows them to walk up to 5 dogs;
   3. Except for commercial dog walkers, persons walking more than three dogs must leash all of their dogs;
   4. Dog waste must be cleaned up and properly disposed of.
   5. The Animal Control Officer will enforce Weston’s Dog Regulations and can be reached at 781-786-6200.

F. Horseback Riding:
   1. Groups of more than five riders, and any organized horseback activities, require a permit from the WCC;
   2. Organized use of Dickson Memorial Riding Rings require a special Use Permit for Horse Events (attached);
   3. Riding is discouraged in wet weather when the ground is soft;
   4. Horseback riding can be dangerous and riders should be courteous and attentive to other trail users.

G. Failure to observe these regulations and common courtesies may result in restrictions or prohibitions of public use.

Section II. Conservation Land Restrictions

The following restrictions shall be applicable to Town land under the care and management of the Conservation Commission (herein referred to as Conservation Land).
A. The following activities are prohibited on Conservation Land, unless otherwise permitted in Section IIB:
   1. Using paintball guns;
   2. Swimming;
   3. Cutting, breaking, removing, defacing, defiling, or ill-using any building, structure, fence, or sign;
   4. Cutting, removing, defacing, or otherwise damaging trees, shrubs, flowers, fungus, grass, or other flora;
   5. Drinking alcoholic beverages;
   6. Disturbing the peace; and
   7. Depositing litter, yard waste, garbage, brush, excavated fill or any hazardous waste.

B. The following activities are prohibited on Conservation Land without a written Use Permit from the Weston Conservation Commission:
   1. Conducting organized group events or activities;
   2. Starting fires;
   3. Camping overnight;
   4. Operating cars, trucks, motorbikes, snowmobiles, or power tools; and
   5. Collecting or removing mushrooms, plants, or wood.
   6. Cutting or removing trees for firewood or lumber, or tapping trees for their sap.

C. The following activities are prohibited on Conservation Land except as expressly permitted in Weston’s Bow Hunting Regulations promulgated by the Conservation Commission, as they may exist from time to time:
   1. Hunting or trapping;
   2. Carrying firearms; and
   3. Willfully disturbing or endangering wildlife.

Section III. Non-Criminal Disposition

As an alternative to criminal prosecution or civil action, the Town may utilize the non-criminal disposition procedure set forth in M.G.L. Ch. 40, §21D and Article V of the By-Laws of the Town of Weston, in which case any police officer of the Town of Weston, the Conservation Commission, the Conservation Administrator, and such other persons as are authorized by the Commission shall be the enforcing person. If non-criminal disposition is used, the following fine schedule shall be applicable for any violation of this By-Law, or any regulation, order or permit issued hereunder and each day a violation exists shall constitute a separate violation:
   A. First violation: warning.
   B. Second violation: $100.
   C. Third violation: $200.
   D. Fourth and subsequent violations: $300.

Section IV. General Use Permits

A. Any activities and uses not set forth above require the permission of the WCC. For any activity seeking written permission, the WCC shall apply the following criteria to the activity:
   1. Does the activity contribute to the WCC’s responsibilities under M.G.L. Chapter 40, section 8C and the WCC Mission Statement?
2. Will the activity promote or enhance the natural resource functions of the site?
3. Will the activity promote or enhance the passive enjoyment of the property by the general public?

B. Any individual or group requesting special permission from WCC shall fill out the attached Use Permit Application. Permits will be issued at the discretion of the WCC.

C. Use Permit requests for equestrian events will be reviewed by the Volunteer Dickson Ring Coordinator, and requests from other special interest groups (i.e., running races, bicycle events, canine events, etc.) will be reviewed by an appointee knowledgeable in the discipline, followed by a recommendation to the WCC as to the suitability of such events.

D. If the event will take place on a Sunday, the applicant must request a Commonwealth of Mass. “Permit to Hold Public Entertainment on a Sunday” with the appropriate fees for any Sunday activity. This permit form is to be submitted to the Board of Selectmen, and must be filed a minimum of 2 months prior to the proposed event.

E. Insurance - The organized group shall obtain, and maintain during the duration of the event, insurance coverage with companies licensed to do business in the Commonwealth of Massachusetts, at the limits acceptable to the Town.

F. Should trails on private property be used, the landowner’s permission shall be sought.

G. An organized group’s past use or abuse of the privilege of using Weston’s Conservation Land may be taken into consideration.

Section V. Use Permit for Dickson Memorial Riding Rings

A. All general use permit requirements listed above must be met in addition to the following requirements.

B. An “organized use” is considered to be any activity hosted by an organization with a recognized presence. These activities may or may not be posted on public or private websites, or advertised via email blasts, mailings, or word of mouth.

C. Any group wishing to run organized activities at Dickson Memorial Riding Rings must submit its request in writing to the WCC via the Conservation Administrator at least 3 months prior to the proposed event.

D. Dates for approved activities based at the Dickson Memorial Riding Rings will be scheduled by the Volunteer Dickson Ring Coordinator.

E. Events involving non-human participants (i.e., equine, canine, etc.) must be confined to the Dickson Memorial Riding Rings unless the Volunteer Dickson Ring Coordinator or an approved substitute agrees to oversee course design, landowner notification, and marking of trails.

F. A suitable donation should be made as acknowledgement of gratitude for the use of the land. For equestrian activities or those based at the Dickson Memorial Riding Rings, donations should be made to the Weston-Wayland Open Spring Horse Show, Inc. to be used for the upkeep of the property. Donations for all other activities should be made to the Weston Forest and Trail Association Endowment Fund. (WCC suggests a donation of 10% of profits.)

G. There will be no alcohol present.

H. Foxhunting (live or drag) will not be permitted on the Weston conservation lands.

Filed with Town/City Clerk: October 14, 2015
Appendix E – 2006 Horticultural Report
Appendix 5 – Horticultural Report

Report to Kay McCahan, Chairperson
Town of Weston Case Estate Committee

January 30, 2006

From:
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978-263-4576

Summary

The Case Estate was used by Arnold Arboretum staff over the years for experimental test plots, nursery projects, and temporary displays of horticultural plants. These displays were intended to be instructive and experimental, not permanent. Remnants of some of those projects remain, but all plants at the Case Estates that were of horticultural significance to the mission or collections of the Arnold Arboretum have been removed, or propagated if they were too large to move.

Prior to the Harvard University’s ownership, the Case Estate was a working, educational farm. A few maps and photographs now in the Arnold Arboretum archives might be useful for determining if any of the trees planted in that earlier era are still standing, however, these references have few plant identification markings. More research and identification during the growing season will be needed to accurately determine if the mature existing trees are original plantings from the Case era.

The local chapter of the Rhododendron Society removed a number of smaller rhododendrons from the Rhododendron gardens at the Case Estate to those at Elm Bank. They are planning to move more plants this spring.

Labels are still present on some plants, but this is not necessarily an indication of their significance. Some specimens are mature and in good health. According to representatives from the Arnold Arboretum and the Rhododendron Society, it would be nice to incorporate these mature, healthy plants into future site plans, but their loss would not be tragic if not appropriate for future users of the site. In other words, decisions about preservation or restoration should be based on aesthetics or landscape function, not on the location of a particular specimen.

Activities related to this report.

I completed the following tasks, as outlined in the contract letter.
• Reviewed materials provided by the Committee.

• Conducted interviews with Arboretum staff who worked at the Case Estate to determine which plantings still at the Case Estate are of significant horticultural value, if any. At the Arnold Arboretum, I met with Julie Coop, Superintendent of Grounds and former site manager of the Case Estate, and Bob Cook, Executive Director of the Arboretum, about collections at the Case Estate and transfer of specimens or propagules from Case Estate plants to the Arboretum. I also talked to Tom Ward, Manager of the Greenhouse, about this topic. I also reviewed the historical records related to the Case Estate housed in the Arboretum archives, working with Sheila Connor, Horticultural Research Archivist, to locate early planting plans and maps.

• I conducted an initial site walk with Kay McCahan and other members of the Committee, and, later, a site walk with George Hibben. George is the designated representative of the Rhododendron Society who helped install and maintain plantings at the Case Estate, was involved with transplanting rhododendrons to Elm Bank, and a propagation volunteer for the Arnold Arboretum working at the Case Estate as well as the Jamaica Plain site. He helped me to assess the value of the remaining rhododendron plantings and a basic evaluation of other plants on site.

**Information and references of value.**

At the end of the report are a few contacts that might be of value for anyone doing future research at the Case Estate. This list does not include members of the Weston Case Estate Committee or their contacts.

**Archives and Historic Maps:**
The archives staff has assembled an extensive index of items found in the Case Estate (1896—) Collection VI CE files, although it is still a work in progress. That index (current as of early January 2006) is included at the end of this report. Based on my initial research, the more valuable maps are the following:

**Series 1. Subseries C, Map Drawer 8, folder 25 (Case Estate maps 1896-1945).**
Within this folder is a bound set of aerial photos dated 1930 showing Hillcrest Farm, the schoolhouse and barn complex, and the plantings behind it and across the street. There are also enlargements of some of the photos in the bound set. I thought the best ones in the series for determining historic conditions for the current site are #58722, #58721, and #58723. The other photos cover areas already sold off or part of the adjacent “40-Acre field” farm.

**Series 2. Subseries A, Map Drawer 8, folder 25 (maps 1945-1985).**
This folder contains maps of many of the experimental plots and projects. For example, Map 15 (1956) shows a vine collection along Wellesley Street that is no longer there. Some maps are proposed plans, so it is unclear which ones were actually planted as mapped. A few maps do have site-verification notes completed at a later date. Map 13 a, b, and c (Case Estate 1947) show trails, stone walls, some of the early testing plots, the
older rhododendrons, etc. Maps 16 and 17 (1956) might help to date the holly collection, crabapples orchard near the "summer house", and a small street tree test plot in the northeast corner of the property. Other maps in the same folder show updates to the crabapple collections done in 1955 with most accessions in 1950-1952; a holly (Ilex) map updated in 1966; and a 1950 map of the perennial garden (across the street) with rhododendrons for a boundary hedge. It is unclear if this is a planting plan or actual "as-built" of the perennial garden.

Notes from Site Visits
Certain areas were highlighted on the map given to me by the Town of Weston Case Estate Committee, and I focused on these areas. I did not find out much about the crabapple collection, although further searching might prove fruitful.

General Historic Values
The Arnold Arboretum staff felt that the house and piggery probably had more historic value than any of the remaining plantings. Some specimens are mature, in good health, and may not be readily available in the nursery trade. It has been a while since anyone spent time out there, but the Arnold Arboretum staff could not think of any plants that were important horticulturally. There are some mature specimens whose preservation would be nice, but not imperative.

Rhododendron Garden area:
Overall, many are in good condition and some (especially behind the stone wall) have labels. There are some mature specimens that would be sad to lose, but all are found in other rhododendron collections and thus not tragic if lost. Overstory is mostly pine and oak, with some white birch growing behind the stone wall. Many saplings, especially pine saplings, are now established. If desired as a display area, it would take some work to restore and maintain, including thinning or removing some trees and saplings to let in more light.

Notes on specific areas within the Rhododendron garden area:
1. The large plants adjacent to the old lilac field (near the road, east of #131) and heading back toward the stone wall were here before the Rhododendron Society became involved in the 1980's. George Hibben said that CJ Patterson tried to identify these plants in the early 1990's but he doesn't know if a report was ever submitted. By his assessment most are old "Iron-Clad" varieties (Rhododendron catawbiense/caroliniana/maximum hybrid crosses with Asian species) as well as Dexter hybrids. We also saw some Rhododendron maximum and some large mountain laurels in good health in this area.
2. Area just west of 101 Wellesley St. house has some Ghent hybrids (unlabeled), and lots of multiflora rose, and behind that old yews, some hemlocks and crabapples.
3. Woodland glade: The area behind the big Stone Wall is where the Rhododendron Society worked extensively in a "woodland glade" setting, under an overstory of birch, pine and oak. Immediately behind the wall (on the west side of the opening) are many nice, larger rhododendrons including R. 'Helen Everett', R. 'Vernus'
(acc.1984), R. 'Mrs C.S. Sargent' (acc.1984), and R. 'Weston Pink Diamond' (mostly deciduous with remnant reddish winter leaf). Again, none are rare, although many are no longer easily available in the trade, according to George Hibben. Big, healthy specimens of Kalmia latifolia and Ilex glabra line the walk from the stone wall to the woodland glade that was the center of the rhododendron garden, although the Ilex glabra is now a little overgrown. Many plants were removed by the landscape contractor who moved plants for the Rhododendron Society (he kept some plants in lieu of payment), but the glade is still nicely surrounded by low to moderate-height rhododendrons. (Rhododendron 'Molly Fordham', R. 'Chinooides', R. bakeri, and others). This is a lovely space aesthetically, but would need mowing, etc to keep it looking good.

Street Tree Collection area:
The northeast corner of the property (marked as 'K' on the map) is part of an old street tree collection which once went from there south to the old Cow Barn. Much of it is filled with brambles and shrubby cover. A collection of small, sun-loving rhododendrons was located here, but has been moved to Elm Bank. A few tree specimens remain. From the north end moving southward: Carpinus tschonoskii (good condition), Halesia tetrapetala 'Rosea' (average to poor condition), Sorbus alnifolia (healthy), Ostrya virginiana (native, multi-trunk in good condition), Magnolia x soulangiana (good condition), and Magnolia loebneri 'Merrill' (good condition) at edge of turf/birch/swamp intersection. None of these are rare species.

Teaching Garden:
According to George Hibben, Daryl Probst was involved with maintenance of this garden and may have some knowledge of what is still here. Many labels for perennials are still here, but identification was not possible in the winter. The four Euonymus sachalinensis plants in front of the square space were obtained from Weston nurseries, originally pleated (trained on wires), and are still in good shape. The Heptacodium in the back right corner is also in good shape. The Arborvitae hedges have been trimmed up by the deer.

Holly (Ilex opaca) collection:
South end of woodlands behind Teaching Garden and heading north into woods along 2 paths. Many of the remaining plants are healthy, although not unusual cultivars. The larger pine and other tree saplings would definitely need to be removed to let in more light if these are to stay.

Trees around the buildings.
The old photographs would tell you if these trees are historic. Of the younger trees, the Acer griseum is "one of the nicest around" (healthy, accession number unknown), while the Euonymus bungeana is old and showing its age. Behind the yellow house is an Umbrella Pine (Sciadopitys verticillata), probably 30 years old by George's guess.
The Nose
We walked through "the nose" in January, so without labels, it was difficult to identify the tree species. The Arnold Arboretum said they took cuttings of everything they wanted, so the value of these trees is aesthetic, and perhaps historic, but not horticulturally important. See notes about historic maps for possible leads.

Perennial Garden
Nothing is left of the old perennial garden. A few of the trees framing the space are nice, such as the Metasequoia and mature Chionanthes near here, but it is unclear if they are on the adjacent 102 Wellesley St. residence property or not.

Variegated conifers along road
These were planted for screening or demonstration, but are not horticulturally significant.

Possible Other Useful Contacts:

Patrick Willoughby, formerly at the Arnold Arboretum and now at Wellesley College
Patrick Willoughby, Associate Director
Physical Plant Administration
E-mail: pwilloug@wellesley.edu
Phone: (781)283-2755

C J Patterson, Rhododendron Society member who attempted to identify the old rhododendrons at the Case Estates. Her phone number is 781-826-6009 or email is chaspatt@comcast.net.

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The author of this report, Cheryl Lowe, was the Horticulture and Botanic Garden Director for the New England Wild Flower Society for the past 14 years. She is currently working as an independent consultant specializing in native plants, and teaches locally. She is co-author of the 2005 revised Peterson Field Guide to Ferns and Their Related Families, and currently serves on the Acton Conservation Commission. She holds a BS in Plant Ecology from Cornell University, MS in Public Horticulture Administration from Longwood Graduate Program, University of Delaware.)