

EXECUTIVE SUMMARY

The Town of Westport purchased Baron's South in 1999. Aerial photography reveals residential uses from 1934 on the parcel. In 1957 +/-, the site was under the ownership of Baron Walter Langer von Langenhoff. During that time, the Baron constructed the residence (where a previous residence existed) known as Golden Shadows. Other work included development of garden areas, pathways and other ancillary uses throughout the site.

The property is unique, in that it has minimal development with dynamic topographic changes. Since the Town purchased the site, the Center for Senior Activities was constructed. Other than the Senior Center, Baron's South is a 22 acre public parcel dedicated as a space for passive recreation. The only uses that are permitted at the site as passive recreation includes walking, gardening, jogging, and learning. The Senior Center is currently undergoing design development for expansion and renovations, and occupies x acres of the site. Some of the existing buildings and perimeter site walls date to the 1930's, based on review of historical aerial imagery.

During the Development of the Baron's South Plan, discussions within the Town considered renovations to Golden Shadows and other structures to serve the Westport Art Center. The use of the facilities will require development of the site to accommodate more automobile parking and improved access from Compo Road South. The Baron's

South Plan has included such potential improvements, while maintaining a focus at the site on the pedestrian experience.

With the goal of maintaining passive activities, the focus for the site design is to create a system of walkways to allow for a diverse experience by the public. A significant portion of improvements to the property will include vegetative restoration. In 2016, overgrown woodland growth and invasive plants were removed. Removal of the large masses of invasive plants results in the need to maintain control over their establishment. The restoration of vegetation will result in improved habitats for wildlife and for the experiences by visitors. If invasive plants are permitted to establish, it will create a more challenging environment for maintenance and for the establishment of a health ecosystem habitat. All new plantings will require the following activities for success, including:

- Control of invasive plants
- Control of deer browsing
- Management of planted and existing vegetation

Small portions of the parcel have improvements proposed to enhance the visitor experience, and permit for educational and passive activities. These include:

- Ornamental gardens
- Vegetable / herb gardens
- Passive seating areas

- Open lawn areas
- Reconstruction of the existing storage building as a Welcome Cottage

Because of the close proximity to the Senior Center, formal gardens / vegetable gardens are proposed. Garden areas can complement senior activities, and introduce other members of the community to the site. A goal of the garden spaces are to serve as meditative, learning, and healing spaces. The extent of the garden is dependent upon the intensity of plantings developed by the public. The site also allows for accessible access for the physically challenged to the gardens from the Senior Center. Due to topographic conditions, universal access is limited, but strategies will allow for access to key elements of the property.

Proposed walkways / trails throughout Baron's South follow many of the walkways developed by the original owner, the Baron Walter Langer von Langenhoff. The walkways do not intend to create significant grading changes, except to provide accessible walkways to allow for universal access as reasonable. Any parking proposed at the site should be limited, and strive for a pedestrian focused property. The area of Golden Shadows can provide an area for minor development of formal spaces, to allow visitors to experience the dynamic topographic changes of the property. Beyond maintenance of a formal meadow space, formal gardens are not proposed. Minor pathways throughout the area shall be eliminated, since these will contribute to maintenance challenges.

The planning for the property did not include an evaluation of the existing structures. In our opinion, improvements to the existing structures should maintain a goal to minimize disturbance to the site, with a focus on the experience of the pedestrian.

The overall development of walkways throughout the property is to provide opportunities for visitors to engage more with nature, and experience a woodland habitat that has a restored understory. The site is intended to provide a respite for residents from the overly developed landscape of the community.

Table of Contents

EXECUTIVE SUMMARY

1. Introduction
2. Circulation
3. Vegetation
4. Implementation
5. Cost for Construction

Appendix

- A. Existing Mapping
 - a. Aerial Photography 1935
 - b. Aerial Photography 1965
 - c. Aerial Photography 1990
- B. Analysis Plans
 - a. Cultural / Circulation Plan
 - b. Ecological Plan
 - c. Vegetation Analysis 1935
 - d. Vegetation Analysis 1990
- C. Master Plan
- D. Custom Soil Resource Report for State of Connecticut, Baron's South Parcel, Natural Resources Conservation Service.
- E. Letter – Peter Picone, CT DEEP
- F. Barons South Open Space Habitat Assessment, The Connecticut Agricultural Experiment Station
- G. Connecticut NEC Tree /Shrub Establishment – 612, Natural Resources Conservation Service
- H. Managing Grasslands, Shrublands and Young Forest Wildlife, Chapter 6: Mangaging Small Forest Openings for Wildlife, Judy M. Wilson, CT DEEP
- I.

1. Introduction

The Town of Westport retained Aris Land Studio to examine the property known as Baron's South for the purpose of developing a system of trails and walkways.

Complementing the site review includes a study of vegetative habitats, and approaches appropriate to proceed with a vegetation management plan.

Since the purchase of the property by the Town of Westport in 1999, numerous studies have focused on the property, resulting in the development of the Senior Center occupying the site in the northwest corner. During the development of this Study, the Senior Center is undergoing design for expansion to meet the needs of the Town. This Study includes coordination meetings with the design team for the Senior Center, that includes ARS Architecture.

Overall, Baron's South represents a dynamic landscape, with topography that is indicative of the time when glaciers covered the landscape. The dynamic landscape is a rarity in Connecticut due to the intensive pressure of development. Normal development would have likely resulted in a much different landscape, than the current one of Baron's South.

Comprised of just over 22 acres, including the Senior Center, the site is a woodland property with numerous specimens of mature deciduous and coniferous trees. A report prepared by Jeffrey S. Ward, PhD. of The Connecticut Agricultural Experiment Station (CAES), was completed March 21, 2016. The report provides recommendations for control, enhancement, and management of the woodlands. Woodland habitats are critical for various species as identified in the CAES report. The species that inhabit such habitats can provide tremendous educational, recreational, as well as economic infusion into the community. One approach the reader can expect in this report, is that “less is more”. We wish to highlight that improvements to the parcel does not necessarily imply the building of structures, but is for the creation of environments that support the community that surrounds the 22 acre site.

The review of the site for pathway systems and habitat restoration highlights the lack of opportunities to introduce vehicular traffic into the site. Parking areas and drives demand significant areas of land to meet engineering requirements. A report prepared by Achilles Architects (dated October 3, 2016) illustrates the significant amount of disturbance necessary to introduce parking for the building known as “Golden Shadows”. Any proposed site improvements to accommodate parking should focus to retain the topographic character of the site.

Soils

The USDA Natural Resources Conservation Service describes the majority of soils as the site as Hickley Loamy Sand (See Appendix X). These soils are gravelly, excessively draining soils. Plant palettes proposed should strive to compliment soil conditions at the site.

Soil samples were taken from the site at X locations. Samples were taken as recommended by the State of Connecticut's Agricultural Experiment Stations Guidelines. Tests performed for the topsoil (top 6 inches) included testing for texture, organic matter, pH, nitrate nitrogen, ammonium nitrogen, phosphorus, potassium, calcium, and magnesium. Results of the tests are available in Appendix X.

Activities

Intensive activities are not intended for the parcel currently known as Baron's South. As such the overall development plan is to encourage engagement of the public with the surrounding ecology. We encourage technology free activities, to allow for greater connectivity to the natural environment. Undeveloped, and not heavily planned, the diversity of habitats is not intensive, but this does not immediately imply a lack of nature of study. The clearing of mature vegetation has increased bird diversity, and is promoting growth of understory plants that were limited in opportunities to the dense canopy that existed. With changes that have occurred, and will continue to occur, activities will include:

- Birding
- Plant studies
- Contemplation
- Nature studies
- Forest Bathing
- Gardening

Each is relatively self explanatory, except for possibly the activity of “Forest Bathing”. The goal is for site visitors to immerse themselves in the nature that surrounds. More studies are revealing the value of spending time in nature, from reducing stress levels to improved learning for children. Such activities can help to reduce cortisol levels in our bodies; a hormone produced by stress. Excessive cortisol levels can lead to detrimental health effects, which results in greater health care costs. The nurturing of nature at Baron’s South is a strategy to nurture the health of our community.

The following sections describe the design approach for new designs of the site, new vegetation habitats, new pathway systems, and a range of probable cost for improvements. The description is supplemented with existing and proposed mapping.

2. CIRCULATION

The primary use of the site is for pedestrians to experience nature, therefore the pathway system is designed to support this use. Other uses proposed for the site are minimal, and is more of an experiential design. Pathways provide linkages through the “woods”, with more intensive uses near higher density locations. Many of the pathways proposed are based on circulation patterns established by Baron Walter Langer von Langenhoff. Due to the dynamic topography of the site, providing pathway design that meet all ADA requirements throughout the site are not possible.

While the circulation systems are intended to move people through the site, we have included some “designed” activities for the site. These activities include:

- Formal Garden Area (i.e. butterfly / pollinator gardens)
- Welcome Cottage / Information Center / Garden Shed
- Contemplation Maze
- Open Lawns / Meadows
- Contemplation Flagstone Patio (High Point)

The overall development of walkways throughout the property is to provide opportunities for visitors to engage more with nature, and experience a woodland habitat that has a restored understory. We propose benches to provide opportunities for visitors to sit, and “experience” nature. Along with experiencing nature, we will include

education for visitors about the importance of habitat restoration, invasive species control, deer



browsing control strategies, stormwater control and the impacts of non-point source pollution. A goal of the design of Baron's South is not only to move people through a restored woodland habitat, but to provide pathways for conversations about things in our environment that can impact our lives.

To provide opportunities for the public who are physically challenged, two locations for access are provided. They include:

- From the Senior Center to the Garden area
- From the new parking area at Golden Shadows, to the upland area
(Contemplation High Point) overlooking Compo Road South.

The garden area is one of the main "gateways" into Baron's South. The location allows for

pedestrians to enter the site from either the Senior Center or from Imperial Avenue. We propose to reconstruct the entrance at Imperial Avenue with a new stone wall, to match the design of the walls located along Compo Road South, and relocate the path to the center to reduce neighbor impact and strengthen the identity of the open space. Visitors pass that garden area that acts as a hub for the property. At the 'hub", information is proposed to learn about woodland habitats, "wet" planting areas, gardens, or the general purpose of Baron's South. Additional education proposed is to

Learning Opportunity

How to Reduce ticks on your property? Per Scott Williams of the University of Connecticut Department of Natural Resources and the Environment, "When we measure the presence of ticks carrying the Lyme spirochete (Borrelia burgdorferi) we find 120 infected ticks where Barberry stands are intact and unmanaged, 40 ticks per acre where Barberry is managed, and only 10 infected ticks where there is no Barberry."

educate the public about the impacts of deer, and how to mitigate their impact on the environment. Other educational topics may include how to combat ticks, and reduce potential contact with them.

The health of Baron's South ecology is intended to aid in the health of the public. The "garden" areas near the entrance are intended as contemplative experiences, or what some may consider a healing garden. Such areas may include walkways with opportunities for sitting, and plantings that may include Coneflower (*Echinacea angustifolia*), a plant utilized in over 300 pharmaceutical preparations in some countries.

Gardens offer many opportunities for community activities. Acting as pollinator gardens, they also provide opportunities for butterflies and other pollinating insects. The reduce number of honey bees illustrates the importance of pollinators for the agricultural industry. As such, a pollinator garden is another opportunity to highlight their importance to visitors, and caretakers of the gardens.

The "maze" near the gateway is intended for a more in-depth contemplative experience. From the stimulation of a young child's mind, to serving as a contemplative respite for adults, garden mazes have been a part of the human built environment that continue to bring wonder and interest to visitors.

Complementing the entry to the site, a "Welcome Cottage" is proposed. Such a structure can serve to

Learning Opportunity



Benefits of plants?

Coneflower - *Echinacea purpurea*

direct users, educate about the site, store garden materials, or simply serve as a focal point in the woodland. To serve the public who are physically challenged, motorized carts may be stored for use at the Welcome Cottage. Such tools can assure universal access throughout the site, where walkways will often exceed a slope that is a challenge for those with physical limitations. The Cottage can also serve to educate visitors about sustainable building strategies, from green roof benefits, to “Passive House” Design (<https://ctpassivehouse.org/ct-passive-house/>).

From our “Welcome Cottage”, visitors can understand the changing terrain at the site. While our walkways are limited, we will provide mapping that defines “difficulty” of the walks. The “difficulty” rating is intended to convey the type of slope users will experience along walkways.

The ratings are

- Moderate – pathways whose slope does not exceed 5%.
- Average – pathways where the slope does not exceed 15%
- Steep – pathways where the slope can be up to 40%

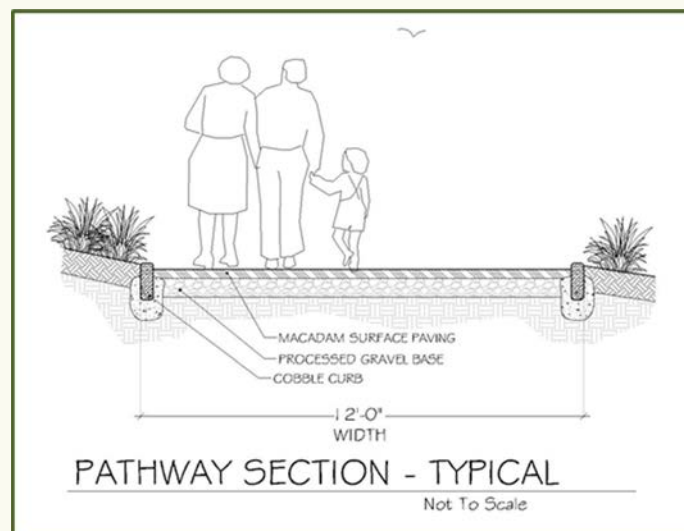
Along with “difficulty” ratings, distances are proposed to provide users with a strategy to measure distances traversed. In an era of “smart technology”, we believe simple signage can inform users of how much they have walked to gain a broader understanding of their outdoor activity.

Part of a greater goal of the site, is to foster an area within our community that is technology free. Not a program for the site, but possibly, we can encourage visitors to maintain a technology free zone within Baron's South. Baron's South is a place to connect to nature, and disconnect from the stresses of life.

Parking as proposed for the Westport Art Center allows for direct access to the structures within the site, along with access for physically challenged visitors to the center of the site. The parking area also allows for an accessible route to the area in the proximity of the Flagstone Patio Overlook (High Point Viewing Area). One of the highest elevations of the property, the overlook with an accessible route from the parking area allows visitors to look down upon Compo Road. The historical significance of the location is to illustrate the role Compo Road had in the Revolutionary War. This design does not elaborate on specific historical aspects, but is intended to highlight opportunities to incorporate historical educational elements within the network of pathways throughout the site.

Primary public access for pathways within Baron's South is for pedestrian access only. The typical width proposed is 12' to allow for Town maintenance vehicles. As a passive recreation site, other vehicular access would detract from the visitor's experience, and as such, a balance will be required between visitors to the Art Center, and site visitors. With a 12' wide pathway, emergency vehicle access is always possible throughout the site. A separate gateway from Boston

Pathway Systems



Typical Walk

Post Road is proposed to provide alternative emergency access to the Senior Center.

Wall – Compo Road South



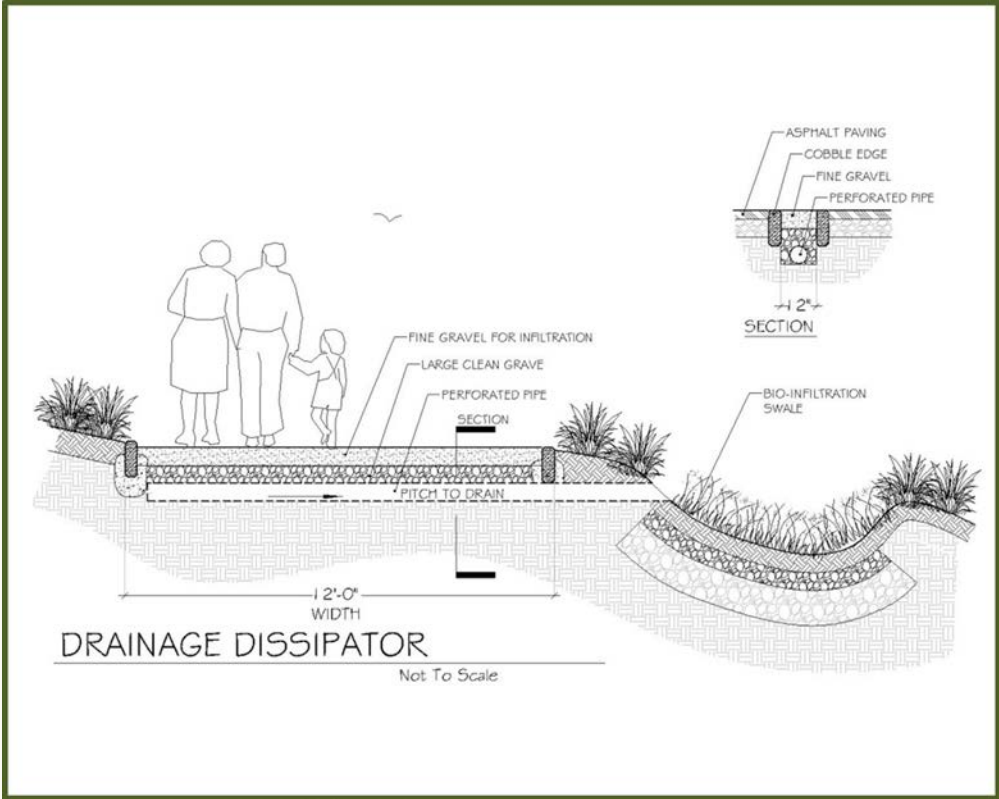
With new stone piers, matching the stonework along Compo Road South, the gateway will help “advertise” Baron’s South, and is not intended for other vehicular traffic.

Proposed plans will limit vehicular access points from the Senior Center, the new parking area from Compo Road, and Emergency Access from Boston Post Road. We propose eliminating vehicular access to the residences currently occupied on the site (southerly entrance on Compo Road South). The existing drive to remain was part of the historical design of the site, apparent in the 1935 aerial photo. As such, we believe the preservation of the Compo Road Wall and access to the north east residence is appropriate historically.

Material for the pathway system proposed is '*macadam*' (common name bituminous pavement). The material provides a stable surface that is not prone to erosion, since we have severe slopes on the site. A cobble edge is proposed for the pathway system, reflecting existing designs. The site has a significant volume of cobblestones that allows for reuse of the material. The garden areas is a unique focal area for Baron's South. To differentiate the garden space from the rest of the restored habitat areas, we proposed '*chip seal paving*'. Chip seal simulates a gravel paving, but reduces the maintenance of the surface area. Light color stones will serve as the 'topdressing', allowing for increase solar reflectivity. The higher level of reflectivity on the garden area will aid in reducing elevated soil temperatures due to dark colored pavements.

Drainage at the site should be dispersed as often as possible, to reduce overall impact to the site. Since the soils are very well drained, high infiltration rates are expected. As an educational opportunity, highlighting "Low Impact Drainage" strategies can lead to improved stormwater strategies throughout the Town. In this manner, we believe Baron's South can serve to reduce "non-point source pollution", by illustrating how simple the designs can be. Small impacts to our environment will have long term benefits for all.

Pathway Systems



Stormwater Infiltration

3. VEGETATION

Baron's South is a opportunity to maintain a 22 acre woodland within a densely populated area. The Connecticut landscape has undergone significant changes over the last 400 years. After the many changes, Baron's South represents an opportunity to educate the public how to maintain woodland pockets in developed areas. Woodland management plans often involve parcels greater than 100 acres. Baron's South represents a unique parcel to initiate vegetation management for a parcel size that is likely more prevalent in southwest Connecticut, compared to other parts of the state. As such, the goal of the work at Baron's South is to implement a plan that balances the needs of a mature forest, nurtures the needs of open space to support diversity of wildlife, and understands the impacts deer can have on the understory of the land. The challenges are significant, but we believe Baron's South represents a tremendous opportunity to create a pocket of open space, that serves the public and the environment in many ways.

In 2016, The Town of Westport conducted removal and clearing of mature trees throughout the site. The work was conducted in a manner to preserve healthy, mature trees and maintain a 'forest' setting. The work was implemented based on recommendations by The Connecticut Agricultural Experiment Station's (CAES) Open Space Habitat Assessment dated March 21, 2016.

The work completed by the Town is the first step in restoring a habitat that encourages more animal diversity, as is evident by some of the songbirds already experienced by visitors. As with any landscape, continued work is required to maintain the landscape, and will require additional tree removal as deemed appropriate by the Town's Tree Warden. The following descriptions highlight strategies to deal with vegetation, and some of the impacts the work will have on wildlife.

Prior to highlighting the plans for planting, understanding impacts to the site for vegetation is critical. Deer browsing decimates native vegetation, and reduces diversity to support wildlife. This report is not intended to dictate strategies to prevent deer browsing, or how to control, but offers suggestions for strategies to implement. In certain areas, plants in the *Amelanchier* genus are rarely eaten by deer, but in other areas, *Amelanchier* plants are decimated. Most critical at Baron's South is to observe what plants at the site are surviving. Some plants observed to date include:

- *Podophyllum peltatum* (May-apple)
- *Osmunda claytoniana* (Interrupted Fern)
- *Osmundastrum cinnamomeum* (Cinnamon Fern)
- *Carex pensylvanica* (Pennsylvania Sedge)

These plants are particularly noteworthy, since they are perennial, low growing plants. One of the most difficult plants to maintain in the woodland forest are plants within easy reach of deer, rabbits, and other mammals such as woodchucks. While observing these plants, promoting their reproduction is one of the tools for the Town to help

preserve the health of this small woodland forest. Therefore, the most important management tool for Baron's South is observing, and recording plants that survive the browsing by mammals. The monitoring process should be ongoing, since changes may cause animals to browse on plants previously not impacted.

With mature trees and the forest floor understood, planting and managing the shrub/small tree landscape is the next task. As we have mentioned, some species not consumed in certain landscapes are browsed in others. Furthermore, plants can reach a mature height, that eventually is out of reach of the deer. The site currently has mature *Rhododendron maximum* (Rosebay Rhododendron) that have developed beautifully, and are out of reach of the deer. The mature height of the plants indicates that the site can support understory plantings, if they are permitted to grow and develop.

Continued maintenance and observation of plants at Baron's South is a critical component of site management. The State of Connecticut, Department of Energy and Environmental Protection (DEEP) offers guidance in developing plans for managing landscapes, known as Integrated Pest Management (IPM). The goal proposed for Baron's South, is to conduct regular inspections, recording observations to understand changing conditions. The strategy allows the Town to address issues and concerns proactively, reducing future expenditures and understanding impacts to the forest's health. The site is testimony of problems that impact the natural landscape and decimates our landscapes. The Hemlock Woolly Adelgid (*Adelges tsugae*) destroyed

many of the mature Canadian Hemlocks (*Tsuga canadensis*), requiring their removal by the Town. Regular inspections may not control all invasive pests, plants and animals, but can understand their impact, and incorporate strategies to reduce their impacts.

Promoting restoration of the understory habitat will require control and removal of invasive plants. The removal of the dense overhead canopy now allows new plants to germinate and grow. Along with native plants that are desired, some noted earlier, numerous new and existing invasive plant species are growing at Baron's South. The Town of Westport's management plan must include control of these invasive plants. Control methods should include use of removal as well as chemical control. While fire control is not permitted in Town, it is another option for removal of invasive plants. Invasive plant control is an intensive process to initiate, but the intensity is reduced as native plants mature and dominate the landscape. The most critical time to control invasive plants is to remove the plants prior to their going to seed, thereby reducing the capability of reproducing on the site.

Beyond vegetation management, plantings and introduction of new understory plantings will continue the habitat restoration process. The overall site plan is intended to restore the understory with deciduous shrubs and small trees, along with defined evergreen areas.

Some species as identified in the CAES Assessment include:

- *Hamamelis virginiana* - Witchhazel
- *Lindera benzoin* - Spicebush
- *Vaccinium corymbosum* – Highbush blueberry
- *Corylus cornuta* – Beaked Hazelnut

- *Others may include:*
 - *Aronia arbutifolia* – Red Chokeberry
 - *Cornus alternifolia* – Pagoda Dogwood (Deer Caution)
 - *Cornus sericea* – Red-osier Dogwood (Deer Caution – including other spp.)
 - *Gaylussaccia baccata* – Black Huckleberry
 - *Ilex opaca* – American Holly
 - *Ilex verticillata* - Winterberry
 - *Juniperus communis* – Common Juniper
 - *Myrica pensylvanica* – Bayberry (normally shoreline plant)
 - *Rubus spp.* – Dewberry (species include *alleghensis*, *flagellaris*)
 - *Sambucus Canadensis* – Elderberry (FACW wetland status)
 - *Vaccinium angustifolium* – Lowbush Blueberry
 - *Viburnum acerifolium* – Maple Leaf Viburnum (consider all native Viburnum species)
 - *Viburnum lentago* - Nannyberry

Other species are identified in the letter (Appendix E) from Peter Picone, DEEP Wildlife Biologist, who visited the site in May 2017. As Mr. Picone mentions, protection from deer browsing is of utmost importance to the success of the plantings.

Deer browsing is likely to lead to decimation of new understory plantings. Some plantings are not as prone to deer browsing as others. The bulletin, "Landscape Plants Rated by Deer Resistance" (<http://njaes.rutgers.edu/deerresistance/>) published by the New Jersey Agricultural Experiment Station provides some guidance to understand what plants may be more or less susceptible to deer browsing. As mentioned previously, observations of plantings installed will help identify those small trees and shrubs most likely to succeed with stress imposed by the deer.

As we have mentioned, Baron's South is intended to educate the public about plantings and how to combat deer browsing. Fencing to establish plantings, and density of plantings that prevent deer browsing as alternative strategies are solutions for incorporation at Baron's South. We know the plantings at Baron's South can help educate residents regarding deer browsing, and the importance of providing control. Some controls may include spraying with environmentally friendly deer repellants and fencing to permit for establishment of vegetation. In our opinion, the Town should seek to avoid permanent deer control fencing.

While most planting areas proposed are to be naturalized, we propose a varied approach to differentiate planting types. With Kalmia the State Flower of Connecticut,

we propose an area dedicated to plantings of this species. The large numbers of varieties provide an opportunity to showcase the different types available. As a spring flowering plant, it would provide a welcome respite following the colder days of winter.

While wetlands do not exist on the site, certain areas of Barons South experience greater periods of “wet conditions”. In such areas, we propose highlighting wetland type of plantings that include *Clethra alnifolia* (Summersweet Clethra) and others tolerant of soils with higher moisture levels. Soils mapping indicated gravel soils, that are well draining. Drainage design for the site should include plants that are better suited for increased moisture, and contribute to the public’s education of “Low Impact Drainage” solutions.

Open areas are proposed near the Senior Center, and open wooded areas as currently exist just south of the Senior Center on the knoll. Original plans by the Baron has a formal lawn area near Golden Shadows. Our proposed designs include maintaining such as open field. Open spaces provide benefits for passive, non-programmed activities, as well as benefits to a variety of wildlife.

Garden areas near the Senior Center are intended to showcase the engagement of the community. In addition to a multitude of activities available at the garden, they can bring us closer to plants. Baron Walter Langer von Langenhoff was a chemist who worked with plants to develop perfumes, and the garden areas are proposed to help

celebrate the science and creativity of such endeavors. The garden can also act as a butterfly garden, or also known as a pollinator garden. As an educational strategy, it serves to illuminate the value of pollinators for the agricultural industry, and why the preservation and development of such open spaces are critical to our well-being.

Combining a variety of planting areas in the garden, with vegetable and herb plantings for example, can contribute to numerous activities to attract differing community members from both the Senior Center and elsewhere in Westport.

Gardens



Butterfly Garden

Culinary aspects of woodland plants provide other opportunities for woodland restoration. The intent is to introduce a new perspective of woodlands as a source for accessing our land for use in the kitchen. *Allium tricoccum*, commonly known as Wild

Leeks, are considered a culinary delight. Not considered rare or endangered in Connecticut, other states consider the plant endangered. Furthermore, our approach is to increase the existence of rare or endangered woodland herbaceous species with the intent of helping restoration and education efforts of the State. With education a significant goal of public engagement, including educational opportunities regarding plant species thought the restoration efforts at Baron's South is a worthy endeavor.

Some plants to consider introducing in the woodland plantings include:

- *Carex novae-angliae* – New England Sedge (Species of Special Concern*)
- *Decentra Canadensis* – Squirrel Corn (Species of Special Concern*)
- *Waldsteinia fragarioides* – Barren Strawberry (Endangered Species*)

* As per the State of Connecticut, Department of Energy and Environmental Protection.

Planting Strategies

The following specification is from the Natural Resources Conservation Service. The 'job sheet' provides an initial approach to installation of new plant material at the site. Maintenance during the establishment period is the most critical aspect of developing new understory plant communities. Along with new planting schemes, maintenance specifications are recommended for new plantings.

"Typically shrubs to be established may come from containerized, bare root, rooted cutting, seedling, or direct seeding plant stock.

The preferred method of planting utilizes containerized materials. Plantings should be arranged in groupings of nine trees and/or shrubs within a 6' by 6' area. Each group will be surrounded by a 12' by 12' by 5' wire protective enclosure to minimize browse for a minimum of 3 years or until the plants are of sufficient size and vigor to be able to tolerate browse. Plantings may also be arranged and fenced individually; these must have an enclosure with a minimum diameter of 3'. If creating rows, arrange trees and/or shrubs in the rows so that they are staggered with relation to the plants in adjacent rows." (from Natural Resources Conservation Service, Connecticut NEC Tree/Shrub Establishment – 612, revised November 2012)

Gardens



Pollinators

4. IMPLEMENTATION

The strategies to restore Baron's South in a manner for maximum public use includes the need to address vegetation management and construction of circulation pathways.

As the two primary areas of focus, the work will permit other elements of site development to follow. We propose the following as an order of work to implement changes:

1. Topographic Survey
2. Control Invasive Species
3. Pathway construction
4. Plantings for Habitat
5. Garden Design and installation

Topographic Survey

While the area around the Senior Center has recent mapping, the remaining area of the site requires improved topographic data to develop plans for construction. The Town will have to review permit requirements to determine if Boundary Survey is necessary for the entire site. Any plans developed for vehicular access should be developed to T-2 standards, at a minimum. Aerial mapping can be developed to T-3 standards, supplemented with data acquired from field measurements.

Control Invasive Species

The process shall begin with mechanical control and documentation of existing conditions. A debate continues regarding the use of herbicides such as *Glyphosate*. Selective applications can effectively control invasive plants, such as cutting of plants and painting of stems, thereby controlling the amount of herbicide applied to the site. Alternative strategies that are organic (such as vinegar) have had some success, but require significantly more effort for reduction of invasive plants. Additionally, organic strategies can cause other ecological harm, and require careful analysis and study to apply properly. We recommend a combined strategy of mechanical and chemical control of invasive plants.

Pathway Construction

Installing new walkways will establish the spine for the restoration of Baron's South. New circulation paths provide opportunities for public enjoyment of the space, and to become witnesses to the restoration of the site. As has been already experienced, wildlife diversity has increased with the removal of mature vegetation. We expect increased presence of song birds and other wildlife that inhabits open forest areas. Curbing is proposed to help define the edge of path, and to maintain the urban connection the site has with the Town. Cobblestone exists on site from existing pathways, and walls that are longer longer relevant to long term design for the site. As a durable material, the curbing can be expected to provide an extended lifespan for any

new paving system. Some of the restoration efforts will include the salvaging of existing stone from the site.

While pathways are intended for pedestrian access, a 3" pavement depth is proposed due to the use of the site by maintenance vehicles. Design for parking access for the Art Center shall require topographic planning, as well as a wider drive for vehicle access. Any drives should remain with the primary use for pedestrian access, and vehicle access as secondary.

Plantings for Habitat

Restoration plantings have been initiated by the Town of Westport's Tree Warden.

Vegetation planning shall restore evergreen areas, with removal of failing older vegetation, and/or care of trees to remain. Vegetation plantings shall focus on the restoration of the understory, with maintenance of existing mature trees. Herbaceous plants shall be monitored, and supplemented with new plantings as feasible. Since the site is too large for new herbaceous plantings, control of invasive plants is the best strategy to promote the development of the herbaceous understory. We recommend installation of pockets of herbaceous plantings, monitoring their progress, allowing them to spread naturally.

Garden Design

The Garden permit the greatest amount of community engagement. The site is not intended as a community garden, but as an experiential garden for the Town. The site

provides for opportunities for various “themes”, including butterfly gardens, rose gardens, sensory gardens as well as herb gardens. Garden care and installation can occur engaging with youth and senior, bringing together multi-generational teams. The “maze” may be developing with plant materials, or with hardscape, but is intended as a focal point for the garden.

We believe the Welcome Cottage provides a unique opportunity to construct the structure as a demonstration structure highlighting sustainable building techniques. A lot can be accomplished in a small structure, and can continue to serve the educational goals of Baron's South.

Conclusion

Restoration and management of the 22 acre parcel can serve as testimony to the opportunities that exist for open space management of small land areas to serve community and ecological needs. The impact we have on our lands are long lasting, and ever changing. In the near future, we expect the opportunity to plant American Chestnuts at Baron's South, introducing a species that once dominated the forests of New England. These trees would mature in 50-75 years, and this is the time frame we are considering for Baron's South. It is a dynamic landscape, that will change over time, and our goal is to engage the community of Westport to become a part of that change.

Reference

<https://youngforest.org/> - " *This website introduces the **wildlife that depends on young forest**. It shows how partners are carefully recreating the kinds of natural events that once provided a steady supply of young forest. It tells the story of how your neighbors - owners of working farms and woodlands – are helping to create this valuable, vibrant habitat.*" Copied from The Young Forest Project.

"Toward Consensus-Based Actions that Balance Invasive Plant Management and Conservation of AT-Risk Fauna", Authors: John A. Litvaitis, Jeffrey L. Norment, Kelly Boland, Kate O'Brien, Rachel Stevens, Donald Keirstead, Thomas Lee, James D. Oehler, Jeffrey M. Taylor, Susan Bickford, Matthew D. Tarr. Publish August 28, 2013, Environmental Management.

"Japanese Barberry Control Methods", Authors: Jeffrey S. Ward, Scott C. Williams, Thomas E. Worthley. February 2013 The Connecticut Agricultural Experiment Station and the University of Connecticut.

"Connecticut NEC Tree/Shrub Establishment – 612", Natural Resources Conservation Service, , revised November 2012

"Landscape Plants Rated by Deer Resistance", Rutgers NJAES Cooperative Extension, Authors - David Drake, Peter Nitzsche, Pedro Perdomo, 4/25/2003 (<http://njaes.rutgers.edu/deerresistance/>)

"Managing Grasslands, Shrublands and Young Forests for Wildlife", The Northeast Upland Habitat Technical Committee, Massachusetts Division of Fisheries and Wildlife, 2006. (http://www.ct.gov/deep/lib/deep/wildlife/pdf_files/habitat/grassland_shrubland_management/Preface.pdf)

Endangered, Threatened and Special Concern Plants, Connecticut DEEP, 2015, (http://www.ct.gov/deep/lib/deep/wildlife/pdf_files/nongame/ets15.pdf)

Reducing Deer Browse Damage 1, December 2007, Natural Resources Conservation Service, ([https://efotg.sc.egov.usda.gov/references/public/NE/Nebraska_Forestry_Tech_Note_72\(Reducing_Deer_Browse_Damage\).pdf](https://efotg.sc.egov.usda.gov/references/public/NE/Nebraska_Forestry_Tech_Note_72(Reducing_Deer_Browse_Damage).pdf))