



NORMAN BIRD SANCTUARY

CULTURAL LANDSCAPE REPORT

PREPARED BY PLACE STUDIO LANDSCAPE DESIGN

2015

Established in 1949 at the bequest of Mabel Norman Cerio, the Norman Bird Sanctuary, under the charge of her will, was to maintain the land "for the propagation, preservation, and protection of birds, and where birds and bird life may be observed, studied, taught, and enjoyed by lovers of nature and by the public generally so interested in a spirit of humanity and mercy." — Mabel Norman



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Introduction

MANAGEMENT SUMMARY, SCOPE OF WORK AND METHODOLOGY

The purpose of this study is to provide as complete a history as possible of Paradise Farm campus at the Norman Bird Sanctuary. Through documentation of the history of the farm's cultural landscape, decisions regarding future campus planning, planting, garden renovations and installations can have a solid basis for decision making by the Executive Director, Board of Trustees and staff.

Over the course of the summer and Fall of 2014, Place studio Landscape Design gathered information regarding the elements that make up the campus at the Norman Bird Sanctuary. A complete inventory with locations and conditions were taken of trees, amenities and artifacts, fences, paving, signage, and lighting. The campus stone walls were located using the 1997 plan by Foster and Associates (outlying stone walls were located using GIS mapping by Horsley Whitten Group 2015).

Property ownership, property use and campus development have been visually rendered in a series of diagrams for analysis. Dates for these diagrams were chosen based on available maps and aerial photographs.

Vehicular and pedestrian circulation and accessibility were documented—as were parking and programmatic events—to identify areas in need of improvement and to ensure optimal safety and efficient use of the campus by a variety of users. Topography and hydrology were documented in order to determine site drainage and to identify opportunities and constraints regarding accessibility throughout the campus. Views and vistas were identified as a method of protecting iconic viewsheds on the campus in perpetuity.

The Main entrance became a priority as funding was made available for the Universal path installation slated for 2015.

A strategy for tree replacement and management as well as the protection of the historic stone walls was recommended.

Specific analysis was done regarding Mabel's Garden outside the newly renovated Paradise Farmhouse. Historic development of this garden was documented through a series of diagrams to shed light on past and current uses of the garden. From these investigations recommendations are made specifically for Mabel's Garden found later in this report.

Historical Overview and Study Boundaries

Paradise Valley and The Norman Bird Sanctuary

The Norman Bird Sanctuary is located in Paradise Valley in Middletown, RI. Paradise Valley is approximately one square mile bordered by Second Beach to the south, Paradise Avenue to the west, Green End Avenue to the north and Third Beach Road to the west. The Norman Bird Sanctuary accounts for approximately half of the valley proper with additional holdings at Second and Third Beaches.

Paradise valley is known for its unique confluence of seven puddingstone ridges,¹ two ponds (Nelson's Pond and Gardiner's Pond), and two beaches (Second Beach aka Sachuest Beach to the south and Third Beach to the east). The puddingstone ridges cross the valley north to south and are composed of quartz, mica schist, slate and other stone which were "fused into a concrete-like mix during metamorphic prehistory of the planet."² These formations are attributed to two natural forces, "ocean pressure which smoothed the rock and glacial erosion which created deep faults in the rock mass."³

Paradise Valley has been subject to man-made forces as well. Three major transformations to the valley resulted from pressures of population settlement and growth. The first transformation came with the original colonists who cleared the forested area for farming and housing. The second was the purchase of the valley by George Norman for development of the Newport Waterworks in 1878-1882.⁴ The Newport Waterworks put controls on Nelson's Pond and in 1889 doubled the size of Gardiner's Pond. Newport Waterworks also rerouted the area's main river, the Maidford, as well as Paradise Brook. The third major transformation of Paradise Valley was the building of Third Beach Road, by Eugene Sturtevant, which opened in 1883 and connected his properties along Indian Avenue in Middletown to downtown Newport.⁵

1 Yarnell, James L., "John LaFarge in Paradise: The Painter and His Muse", William Vareika Fine Arts, Newport, Rhode Island; 1995. p.4-5. Yarnell cited T. Nelson Dale (1845-1937), professor of geology at Williams College and his Map 3 entitled The Seven Ridges of Paradise, According to T. Nelson Dale (1884).

2 Ibid

3 Ibid

4 Jones, Daniel W. Jr and Yarnell, James L. (2012) "Some Memories of Kittymouse," *Newport History*: Vol.81: Iss.267, Article 2.

5 Yarnell, James L., *John LaFarge in Paradise: The Painter and His Muse*, William Vareika Fine Arts, Newport, Rhode Island; 1995. p.16



PARADISE VALLEY, MIDDLETOWN, RI

(Source: RIGIS, 1997 Digital Orthophotographs, 1998. James Yarnell, *John LaFarge in Paradise: The Painter and His Muse*; Map 2 "Paradise: The Places Where LaFarge Lived and Worked", 1995.)

Norman Bird Sanctuary as a Cultural Landscape



Photo NBS Archives

Norman Bird Sanctuary as a Cultural Landscape

SITE HISTORY, EXISTING CONDITIONS, ANALYSIS AND EVALUATION

Introduction

The natural and cultural histories of the Norman Bird Sanctuary are inextricably linked and both man and nature have made their marks. The Wampanoags came to hunt and fish followed by European settlers who cleared the land and set up farms.¹ George Norman changed the land with the Newport Waterworks and artists such as William Morris Hunt (1824-1879), William Trost Richards (1833-1905), and John La Farge (1835-1910), documented these changes in the landscape.

Each occupant of this “slice of Paradise”, called Paradise Valley, contributed to the cultural history of Paradise Farm aka The Norman Bird Sanctuary as a steward of the land either for sustenance or profit. Mabel Norman chose a legacy not of farming but of the protection of birds and wildlife. Although this has been the primary focus of the Norman Bird Sanctuary as provided by Mabel Norman’s will, the cultural history of the property is of significant value as well. Paradise Farm and the NBS campus provide a glimpse into the past of what a colonial New England coastal farm looked like. Since about 1995, many of the buildings on the NBS campus have been restored—most recently,

the Paradise Farmhouse in 2013. It is the intent of this report to begin evaluating and valuing the landscape spaces and features associated with generations of owners, tenant farmers and stewards of this property. Cultural landscapes are defined by the stories of these inhabitants and the material evidence they have left behind. According to Robert R. Page, cultural landscapes are defined as “A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein associated with a historic event, activity or person, or that exhibits other cultural or aesthetic values. There are four general landscape types: historic designed landscapes, historic vernacular landscapes, historic sites and ethnographic landscapes.”²

The purpose of this report is not just to provide a site history and existing conditions report, but to provide an analysis and evaluation of these findings. Historic maps and overlays have been used to better understand the development of the overall campus and Mabel’s Garden. This effort will assist the NBS in

¹ Yarnell, James L., *John LaFarge in Paradise: The Painter and His Muse*, William Vareika Fine Arts, Newport, Rhode Island; 1995. p.15

² Page, Robert R., *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Reprint from the University of Michigan; U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscape Program, Washington, DC 1998.

Norman Bird Sanctuary as a Cultural Landscape

their decision-making regarding future campus improvements. Considerations for improvements to historic properties often focus on a particular time period for restoration. Current and future uses of the property must also be considered. A balance must be found that is ecologically and financially sustainable for the future and supports the mission of the institution.

In 2008 Smith-Gardiner-Norman Farm Historic District A.K.A. Paradise Farm A.K.A. Norman Bird Sanctuary was awarded Status in the National register of Historic Places (NRHP). The period of significance is ca1750-1949.³

According to their guidelines, integrity demands “the authenticity of a property’s historic identity, evidenced by the survival of physical characteristics”⁴ existing during a particular time in history. Therefore, if enough material historic fabric remains on a site it is deemed to have “integrity” and therefore has value as a historic site. In the NRHP Statement of Significance, the “property is associated with events that have made a significant contribution to the broad patterns of our history”.⁵

In addition to the buildings, “Historic Functions” pertaining to the landscape received recognition. Historic functions were noted as “Agriculture/processing” and “Current Functions” include: landscape/natural feature, education/wildlife refuge, education/museum and landscape/wildlife refuge.⁶

BUILDINGS:

“The Smith-Gardiner-Norman Farm aka Paradise Farm is a coastal farm in Middletown, Rhode Island of about 325–acres comprising a mid-18th century farmhouse with later additions, a mid-19th century barn, two modest scale agricultural outbuildings, two burial sites, a stone-lined sheep pen, stone-fenced pastures and fields, wooded areas, Hanging Rock (a well known geological formation), and an abandoned bluestone quarry. The property has four contributing buildings and eight contributing sites” (which we are concerned with here). The colonial stone walls are considered a contributing structure.”⁷

LANDSCAPE:

The character of the New England farm vernacular remains clearly legible at the Norman Bird Sanctuary. The Orchard, and Family Garden combined with the Farmhouse, Barn and outbuildings make up the historic heart of the campus, while the Agricultural Fields provide iconic views and hark back to the days of a New England salt hay farm.⁸ The campus developed over time from a colonial farm with livestock and hay fields to a summer estate and to what is now the Norman Bird Sanctuary. The eight contributing sites on the property are; the Agricultural fields, Orchard (19th and early 20th century), Family Garden (early 20th century), Sheep Pen (19th century), Gardiner Family Burial Plot (ca 1786-ca 1872), Gravesite (date unknown), Hanging Rock, Quarry (19th Century).⁹

3 http://www.preservation.ri.gov/pdfs_zips_downloads/national_pdfs/middletown/midl_smith-gardner-norman-farm-hd.pdf

4 Ibid

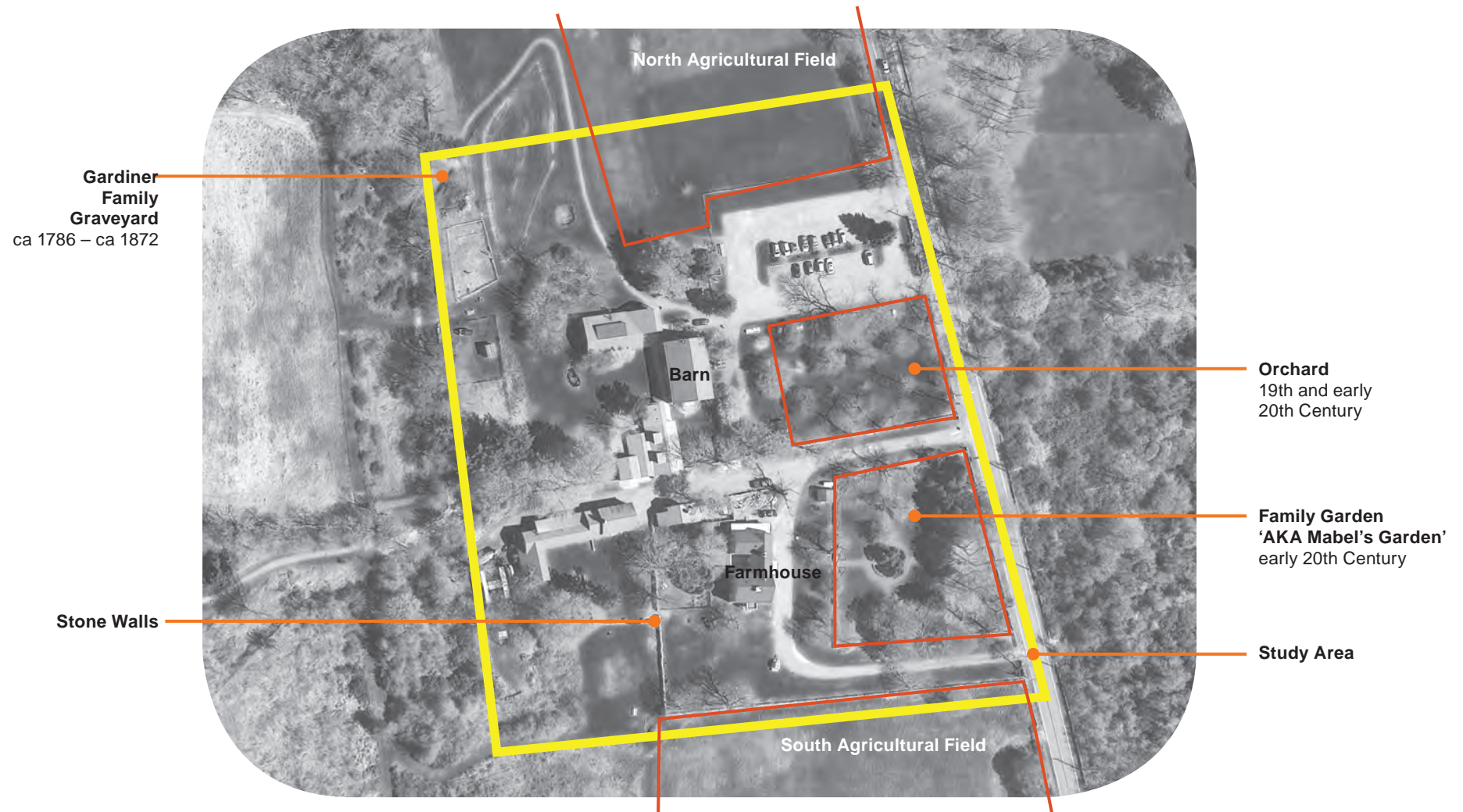
5 Ibid

6 Ibid

7 Ibid

8 Salt hay farming refers to harvesting marsh grass for livestock feed.

9 http://www.preservation.ri.gov/pdfs_zips_downloads/national_pdfs/middletown/midl_smith-gardner-norman-farm-hd.pdf



Contributing Sites at Norman Bird Sanctuary Campus AKA Paradise Farm as identified by NRHP

NOTE: Sheep Pen, Grave Site, Hanging Rock and Quarry are outside this study area and considered contributing site as per NRHP 2012. (RIGIS base aerial)

Visual Timeline

The Purgatory Formation, commonly known as pudding stone, was formed through the erosion of ancient sedimentation of boulders, cobbles, pebbles, and sand. Powerful geologic forces deep under the earth stretched and fractured conglomerate formations, including hanging rock.

250 Million Years Ago



Hanging Rock (<http://digitalcommons.salve.edu/postcards/886/>)

Aquidneck was inhabited by the Wampanoag Indians. Their presence on the NBS property 1,800 years ago is confirmed by archaeological evidence, including the midden found along Quarry Trail.

8,500 Years Ago

**King
Philip's
War
1675-1676**

**Middletown
incorporated
1743**

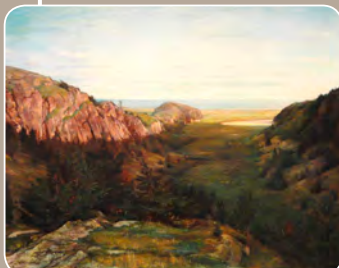
**American
Revolution
1775-1783**

Benjamin Gardiner acquired the property from Philip Smith. The campus shifted away from sheep grazing towards dairy, grain, barley, and Indian corn production. Benjamin Gardiner was interred at his family burial plot—one of the two grave sites located on the NBS campus.

PRE SETTLEMENT: EARLY GEOLOGICAL HISTORY

18,000 Years Ago

The last giant continental glaciers extended over most of North America. The scraping action of this glacier removed layers of soil and exposed Hanging Rock Ridge.



John La Farge, *The Last Valley - Paradise Rocks*; Yarnell, James L., John La Farge in *Paradise*, p.115

1615- 1619

Wampanoags were ravaged by disease brought from Europe and 40 percent of their population was lost.

1620

Pilgrims arrived in New England

Primitive stone walls were built by piling stones against existing wooden fences.



Colonial stone walls

1639

Newport, RI founded

1714

Edward Smith and others, purchased a large coastal area of Middletown, which included the Norman Bird Sanctuary, then called 'Sachuest Farm'.

Circa 1750

The farmhouse was built, possibly by Thomas Weaver. For the next century, most of the property was a "saltwater" farm. Sheep grazed on the ridge slopes, salt marsh hay was harvested in the marshes, and mixed crops were grown.



Photo NBS Archives

As British soldiers retreated from Aquidneck Island, they destroyed as much as they could including farms and fruit trees.

1788



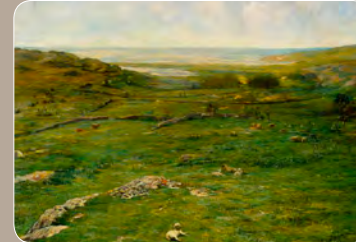
Photo NBS Archives

The barn was built.

Circa 1860

George Norman purchased Paradise Farm primarily to secure the water rights for the Newport Water Works which significantly altered the topography of Paradise Valley. The family continued to lease land for farming.

1878



John La Farge, Paradise Valley; Yarnell, James L., John La Farge in Paradise, p.104

Luminist painters such as John La Farge, John F. Kensett, James A. Suydam, Thomas Worthington Whittredge and other artists painted extensively in Paradise Valley.

Late 1800's

1820

Samuel Allen purchased the farm from Benjamin Gardiner's heirs, and converted it from an owner-worked farm, to a tenant farm.



Photo NBS Archives

1861-1865
Civil War

1875

Mabel Norman was born, the last of nine children to Abbie and George Norman



Photo NBS Archives

1880
Paradise Farm comprised "125 tilled acres, 101 permanent pastures and meadows, vineyards, and orchards. 60 mown acres yielded 70 tons of hay." The farm produced barley, oats, potatoes, and maintained 70 fruit trees.



Photo NBS Archives

1881

George Norman sold Newport Waterworks to the City of Newport

1900

George Norman died and income and estate taxes are enforced by the U.S. Government.

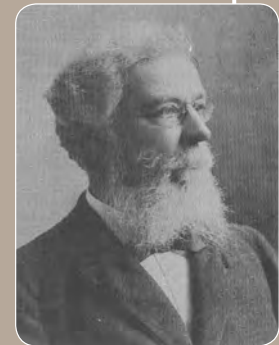


Photo NBS Archives

Visual Timeline

Mabel Norman purchased the Paradise Farm from the estate of her brother. At the time she expressed an interest in the establishment of a nature preserve or bird sanctuary.

1908

WWI
1914–1918

Renovations are completed on the Farmhouse

1917



Teddy Roosevelt signed the Migratory Bird Act

1918

Women gained the right to vote

1920

WWII
1939–1945



Photo NBS Archives

1915

George and Mabel Cerio met in Italy and were married. They divided their time between Middletown, RI and The Isle of Capri, Italy. They hired architects Clarke and Howe to renovate the farmhouse for their summer residence.



Farmhouse -
Photos NBS Archives

1929

The Wall Street Crash of 1929

1943

George Cerio died



George Cerio -
Photos NBS Archives

EARLY 20TH CENTURY



Photo NBS Archives

1949**NBS WAS ESTABLISHED**

at the bequest of Mabel Norman Cerio, the Norman Bird Sanctuary, under the charge of her will, was to maintain the land *for the propagation, preservation, and protection of birds, and where birds and bird life may be observed, studied, taught and enjoyed by lovers of nature and by the public generally so interested in a "spirit of humanity and mercy."*

The refuge at this time was 235 acres in size.



Rachel Carson's landmark book 'Silent Spring' was published calling attention to the effects of DDT on bird populations

1962

1954-1975
Vietnam War

1950-1953
Korean War



Photo NBS Archives

Land and Water Conservation Act and The National Wildlife Refuge System Act was signed

1964

The National Wildlife Refuge System Act was signed

1966**1963**

The Dam was built at Red Maple Pond

The Endangered Species Act was signed

1973

Local architect George Warren renovated the Barn interior.

1981**1974**

First Harvest Fair

1983

Dam at Red Maple Pond was replaced



Newport Collaborative developed planning and use strategies for the farm buildings.

1995**1997**

The National Wildlife Refuge System Improvement Act was signed.

Norman Family agreed to release their remaining interest in the NBS campus property.

Michelle Foster Associates with Urban Design Group was hired to develop a Facilities Plan.



The campus and existing buildings including the administrative building, classrooms, pump house, garages, and tool shed were extensively renovated.

2000-2014**2008**

Smith-Gardiner-Norman Farm aka Paradise Farm was placed on the National Register of Historic Places.

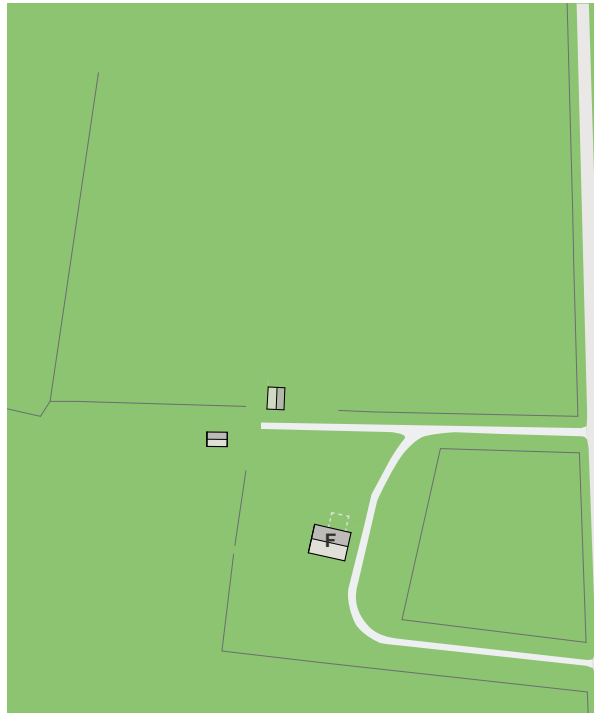
2013

Paradise Farmhouse was renovated by Michelle Foster Associates with Urban Design Group



All photos by Place studio unless otherwise noted

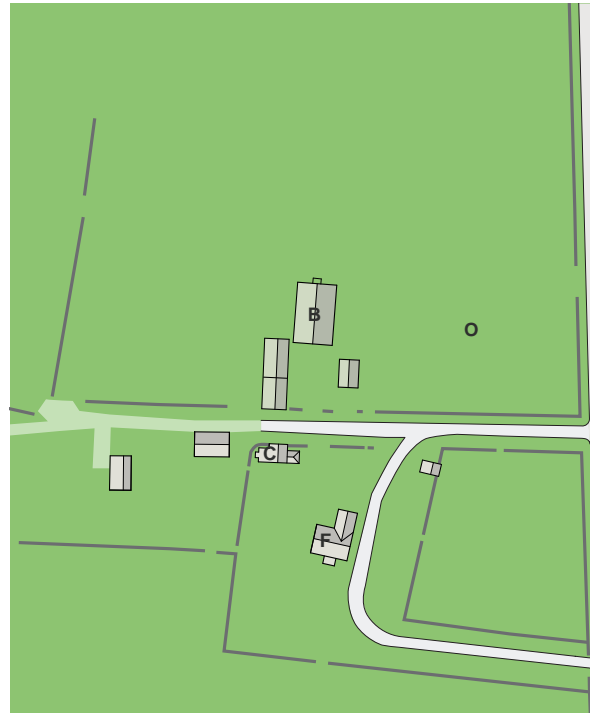
Development of Campus



1750 Smith

Isaac Smith was a descendant of one of the first families to settle in Middletown, RI from England and his heirs occupied Smith Farm from 1714-1782. The original farmhouse was built in 1750.

It is not clear from our research where the orchard was but we can assume an orchard was always part of this property from early the 1700's onwards.



1782 Gardiner

Benjamin Gardiner purchased the farm and renovated the farmhouse. A kitchen was added to the northeast. The Gardiner family occupied the property from 1782-1819.

1860 Allen

Samuel Allen occupied the farm from 1819-1869 and built the barn. He leased the land to a tenant farmer.



1939 Norman

George Norman purchased Paradise Farm in 1898 and later gave it to his son George. Mabel Norman bought the farm from her brother's estate in 1908. In 1915 she and her husband, George Cerio made extensive renovations to the farmhouse in the Colonial Revival style and probably installed the garden shown here. Vehicular access was significantly increased.

(source: 2006 "Vegetable & Flower Garden at the Norman Bird Sanctuary" reconstruction by Robert T. Buchanan; 1939 aerial photography, RIGIS)

LEGEND

- A AVIARY
- B BARN
- C CARETAKERS COTTAGE
- F FARMHOUSE

- G GARDEN
- H HOOP HOUSE
- O ORCHARD
- P PARKING
- S STUDIO
- W WELCOME CENTER





1950 NBS

In 1949 Mabel Norman died and the Norman Bird Sanctuary was established. Several smaller buildings have been removed and the more elaborate gardens are reduced but the orchard is thriving. Vehicular and parking areas at the barn and studio remain the same and trail linkages are expanded for visitors.

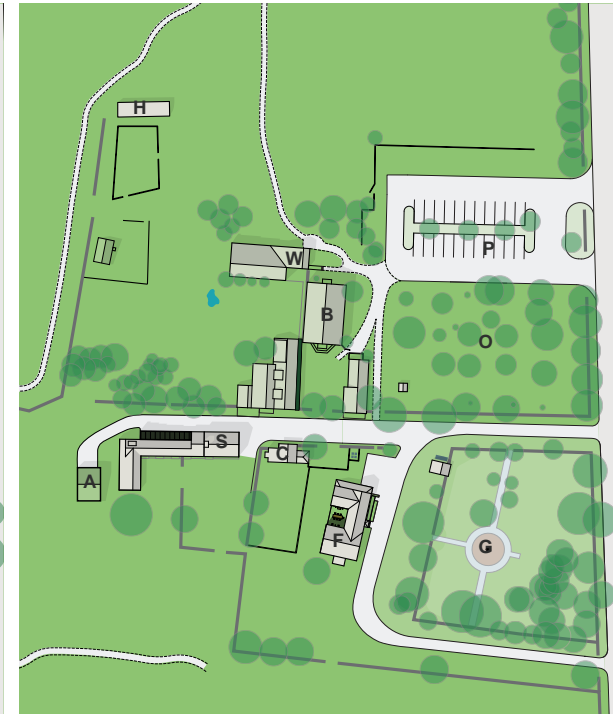
(source: 1845 "Plan of Paradise Farm" by C.R. Lynch, C.E. courtesy of James Yarnell, NBS archives; 1950 aerial photography, RIGIS)



1997 Survey

Visitor parking is contained at the northeast corner of the campus and interior parking areas at the barn and the studio are grassed over. Trails and pedestrian access are redefined. The aviary building and hoop house/garden have been added. "Mabel's Garden" is further simplified and the interior circle is widened.

(source: 1997 Survey by M.J. Gaston & Associates, NBS archives; 1997 aerial photography, RIGIS)



2014 NBS

The Administration/Welcome Center is added and aviary is relocated to west side of the Studio/Classrooms. Parking is enlarged at the northeast corner of the campus. Vehicular and pedestrian circulation is modified. A Third Beach rental cottage is moved on site and the fish pond is added to the west yard. The split-rail fence has been removed at the north side of the barn and a new fence has been added to the caretaker's cottage.

(source: 2005 Master Plan by Foster Associates and Urban Design Group; 2011 aerial photography, RIGIS; 2014 site measurements and documentation by Place studio)

Development of Mabel's Garden

Mabel's Garden Influences

INTRODUCTION

Mabel grew up in a time of great wealth in the northeast United States. In Newport, RI she experienced the effects ostentatious wealth expressed in the design of fanciful estate gardens such as Mrs. James' "Blue Garden", and The Elms 'Sunken Garden'. In Boston and New York she witnessed major civil engineering projects of the day including Boston's Emerald Necklace and New York's Central Park.

Mabel also spent time traveling throughout Europe, especially Italy, where she explored garden villas with her mother Abbie in and around Rome. In 1915, after her mother died, she married George Cerio and spent winters in his home town of Capri where she probably enjoyed visits to the Augustus Gardens and Villa San Michele.

Mabel and George chose to summer at her beloved Paradise Farm in Middletown, Rhode Island where she created a garden, which is now called "Mabel's Garden". The bones of this Colonial Revival garden still exist today.

This investigation into Mabel's life and times is an attempt to get to know her intentions better and to understand what influences may have led to certain choices she made in the design of her garden. It is also an investigation into the

relevance of a complete restoration of the garden and alternatively an interpretation of what Mabel might do today.

Although Mabel's life experience was broad her mission for the Norman Bird Sanctuary was narrow. She left specific instructions in her will to preserve Paradise Farm "for the propagation, preservation, and protection of birds, and where birds and bird life may be observed, studied, taught, and enjoyed by lovers of nature and by the public generally so interested in a spirit of humanity and mercy."

NEW ENGLAND AND NEWPORT'S GARDEN TRADITIONS

In the late 1800's in America, especially in the northeast, gardens were meant to display new prosperity and therefore social status. Architecture turned away from the wooden 'Shingle Style' towards a more substantial and permanent brick and stone construction.¹ Garden designs were adopted from English and European examples. According to Griswold and Weller, authors of *The Golden Age of American Gardens, Proud Owners, Private Estates*, 1890–1940, between "1890–1914 gardens became more firmly structured to complement the new taste for more academic domestic

¹ Robinson, Jennifer L. and Yarnell, James L. (2012) "Belair," *Newport History*: Vol.81: Iss.267, Article 3



The 'Blue Garden', was restored by Dorrance Hamilton- in 2014

architecture. Terraces, axes, and cross axes were designed to echo the symmetrical shapes and plans of the houses they adjoined.”² They go on to state that “Creating a garden was (considered) a socially valuable act if not actually a public duty.” Contact with nature was considered a health benefit and an antidote for urban ills.³

Plants and plant collecting were in vogue as well. Most estates had their own greenhouses to keep them supplied with annuals for the “eight weeks of summer”⁴ There were several retail nurseries on Aquidneck Island which carried the unusual plant, tree or a selection of seeds. This era in Newport history saw the burgeoning collaboration of owner, landscape architect, gardener and supplier that bestowed a plethora of landscape planning and garden design on Newport estates. The cost of these gardens was enabled by the fact that there was no income tax and no estate tax prior to 1900. After 1900 and the economic crash of 1929 many estates were sub-divided and fortunes and gardens were lost. However, Newport has always attracted new home owners with an eye towards acceptance into Newport’s social circle and the tradition of garden design continues on today.



'Belair' c.1870 and grounds (stereographs probably by Joshua Appleby Williams)

MABEL IN NEWPORT

Mabel was born the last of nine children to Abbie and George Norman of Newport, RI on May 30th, 1875.⁵ The Norman family was prosperous and as such they were part of a wealthy social circle in Newport. Women of the day filled their time with creative pursuits such as needlework, music, writing and painting. The outlet for Mabel’s creativity came in the form of her love of art and nature.

Prior to Mabel’s purchase of Paradise Farm in 1908 from her brother’s estate, she lived at her family’s estate on Old Beach Road called ‘Belair’ which still exists today.⁶ The house was built in 1850 by Seth C. Bradford for Henry Allen Wright. It was built out of Fall River Granite in

the Italianate style which was popular at that time.⁷ Mabel’s father, purchased it from Wright in 1867 and with the help of Dudley Newton, made improvements to the property.⁸ The 1876 Atlas shows the grounds laid out as a park-like setting with stables, a greenhouse/bowling alley and other outbuildings. The buildings were eclectic in design.⁹ In an article for Newport History by Robinson and Yarnell they state, “the stables were in the form of a miniature turreted Dutch Renaissance palace. The porter’s lodge adopted Swiss decorative details”.¹⁰ The greenhouse/bowling alley was rendered in the Gothic Revival style.¹¹ Two rustic outbuildings, the hennery and the tree house were made of

2 Griswold, Mac and Weller, Eleanor, “The Golden Age of American Gardens, Proud Owners, Private Estates, 1890-1940. Harry N. Abrams Publishers 2000. p

3 Ibid.

4 Eudenbach, Harry J., “Estate Gardeners of Newport, a Horticultural Legacy”, Copyright 2010 by Harry J. Eudenbach. p.

5 Robinson, Jennifer L. and Yarnell, James L. (2012) “Belair,” *Newport History*: Vol.81: Iss.267, Article 3

6 Robinson, Jennifer L. and Yarnell, James L. (2012) “Belair,” *Newport History*: Vol.81: Iss.267, Article 3

7 Robinson, Jennifer L. and Yarnell, James L. (2012) “Belair,” *Newport History*: Vol.81: Iss.267, Article 3

8 Ibid.

9 Ibid.

10 Ibid

11 Ibid

Development of Mabel's Garden

trimmed cedar branches. This rustic style was frequently used by Frederick Law Olmsted in his public park gazebos, railings and furnishings. The park-like setting of 'Belair' may have been influenced by English pastoral European garden traditions.



'Belair' rustic tree house
(stereographs probably by
Joshua Appleby Williams)

1876 Newport Atlas, with rendered overlay by
Place studio, of 'Belair Estate' (one year prior to
Mabel's birth). Porter's lodge, lower right; 'Deer
Park', center and stables.

Note: Dark grey denotes driveway and paths.

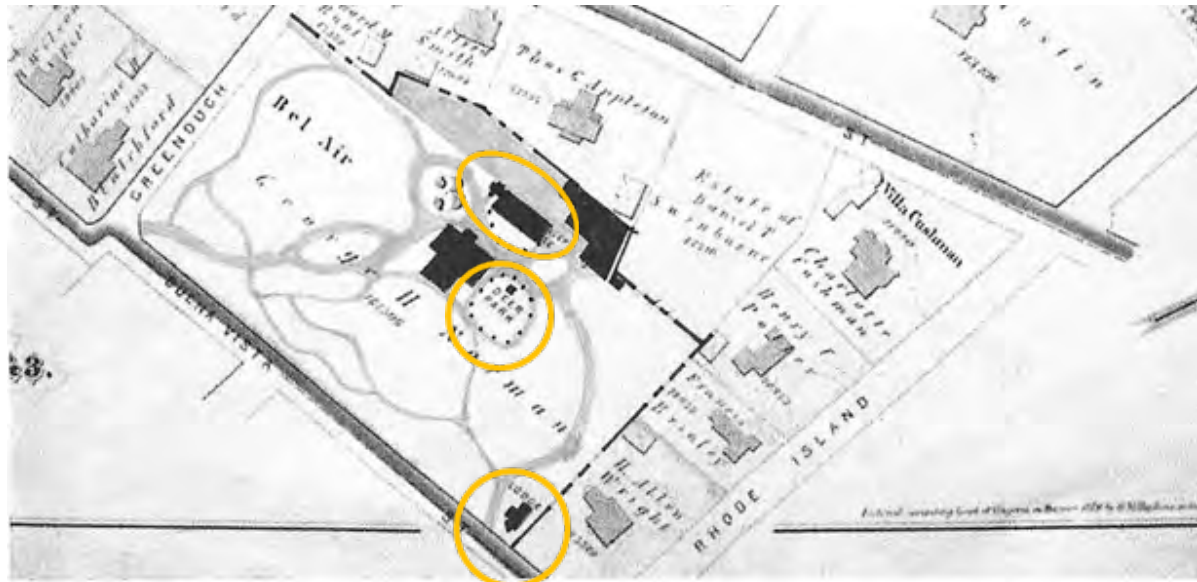
MABEL IN BOSTON AND NEW YORK CITY

It is not clear whether the Normans lived at 'Belair' year round. George Norman had an office in Boston and Mabel received her art education at The Museum of Fine Arts School.¹² He also traveled a great deal for his work and was certainly wealthy enough to have houses in several places. Mabel spent time with her family in New York and Boston. She was a member of the Providence Art Club and the Newport Art Association, currently the Newport Art Museum.¹³ Her portrait of Maude Howe Elliot (ca.1930) now hangs in the upstairs hall.

Boston, in the late 19th century was undergoing radical changes as a city. It was then, and is now, considered the intellectual and education hub of the northeast. In the late 19th and early 20th Centuries, urban dwellers turned their attentions to social reforms such as health and safety for all residents. In 1873 Central Park was completed by Olmsted and Vaux.¹⁴ Five years later, in 1878, Fredrick Law Olmsted began work on the Emerald Necklace, 1,100-acres of park through Back Bay Boston and Brookline whose dual purpose was to connect the Boston Common and Franklin Park while controlling flooding in the marshy lowlands

¹² Ibid.
¹³ Ibid.

¹⁴ <http://www.centralparknyc.org/about/history.html>



of Back Bay.¹⁵ In this same year, Mabel's father, George, a self-made engineer,¹⁶ purchased and began work on the Newport Water Works in Paradise Valley, Middletown, RI creating a managed potable water source for the city of Newport.¹⁷ Olmsted's work on the Emerald Necklace, would have been of great interest to Mabel's father who probably took the family up there leaving his wife and daughter(s) at the

Museum of Fine Arts (founded in 1870) while he viewed Olmsted's progress or went to work at his Boston office.¹⁸

Mabel's father died in 1900, so he would not have seen the opening of the Isabella Stewart Gardner Museum in 1903 but Mabel and her mother may have been invited to the opening and surely enjoyed the Gardner's vast art collections at the

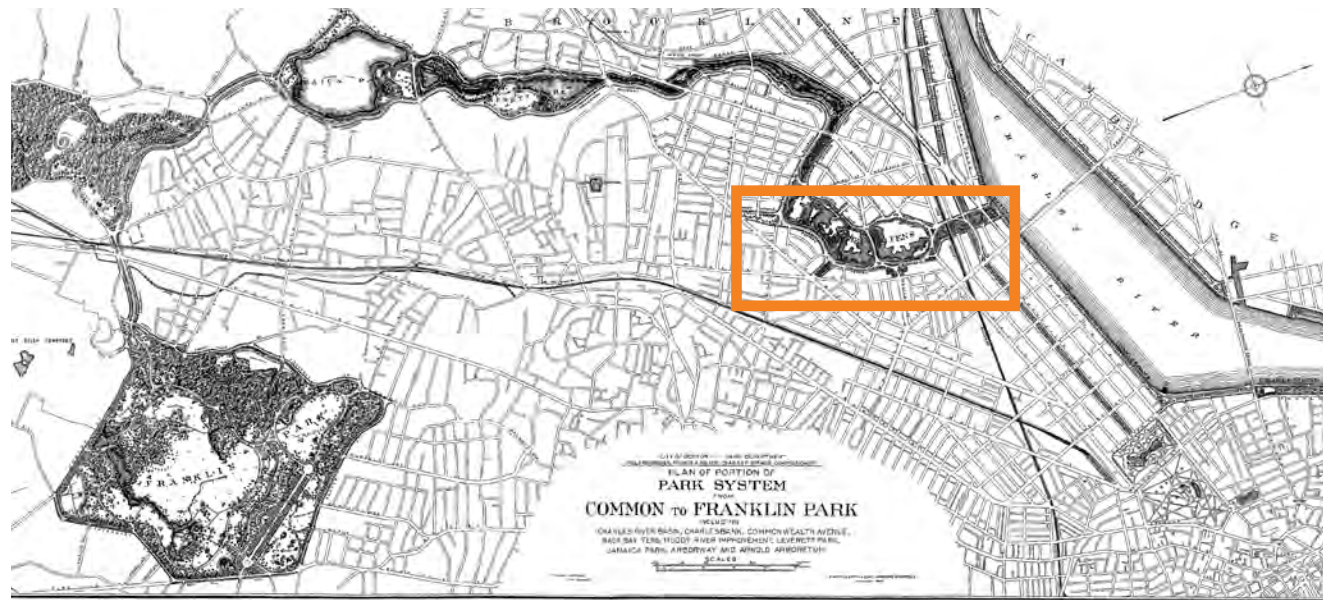
MFA and at the new Gardner Museum. In 1909 the Museum of Fine Arts and its school of fine arts moved to its current location just steps away from the Isabella Stuart Gardiner Museum along the Fens, Olmsted's finished portion of the Emerald Necklace. At this time, Mabel would have been twenty-seven years old and still living at home with her mother at 'Belair' in Newport.

15 <http://www.emeraldnecklace.org/park-overview/frederick-law-olmsted/>

16 Jones, Daniel W. Jr and Yarnell, James L. (2012) "Some Memories of Kittymouse," *Newport History*: Vol.81: Iss.267, Article 2. p.20

17 Robinson, Jennifer L. and Yarnell, James L. (2012) "Belair," *Newport History*: Vol.81: Iss.267, Article 3

18 Ibid.



Boston's Emerald
Necklace with Fens -
Olmsted Archives

Development of Mabel's Garden

MABEL AND GEORGE CERIO IN ITALY

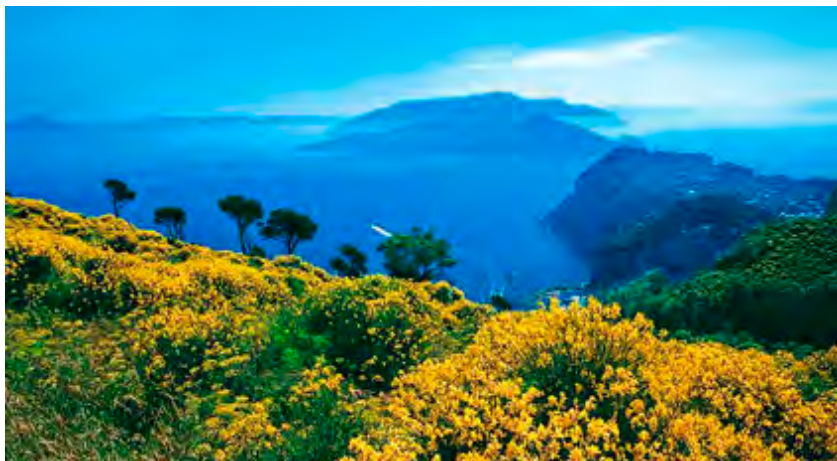
Mabel's mother Abbie loved Italy and she and Mabel traveled there frequently for Mabel's art education and for her own obsession with Italy. The Norman's Newport home, 'Belair' was filled to over-flowing with European furnishings which Abbie collected. One can only imagine the influence that Italy's great art, architecture and gardens had on young Mabel. It is impossible to think that Mabel could resist employing some elements from the Italian Villas she visited at her garden on Paradise Farm, nor could it have escaped her attention that some elements of both places were quite similar.

Garden design and horticulture were all the rage in America in the late 1800's and early 1900's. One

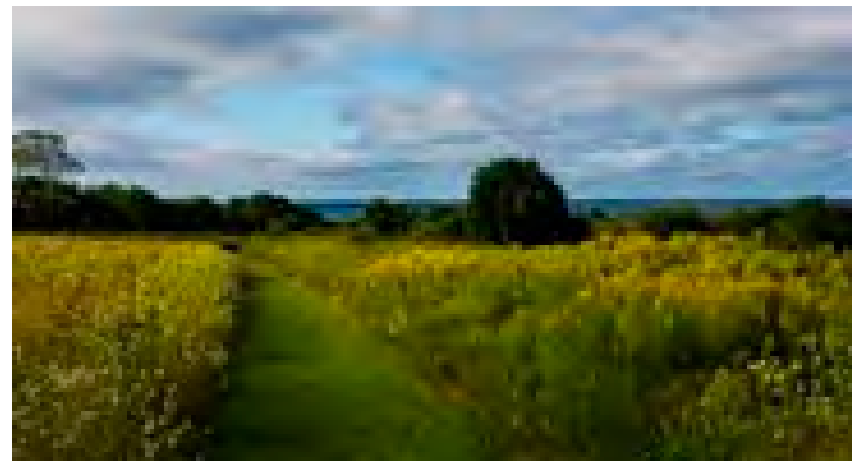
of the many books published on garden design and horticulture at this time was Edith Wharton's, *Italian Villas and their Gardens*, published in 1904. It is easy to imagine Mabel and her mother pouring over this book and the illustrations by Maxfield Parrish of the villas that they themselves must have visited on their overseas excursions. What is significant about this, and many books and periodicals of the time, was their 'how to' attitude; how to interpret and adapt European garden styles to the American Garden. As Wharton states in her introduction '.....the garden-lover should not content himself with a vague enjoyment of old Italian gardens, but should try to extract from them principles which may be applied at home.....the old Italian garden was meant to

be lived in, a use to which, at least in America, the modern garden is seldom put.' She goes on to say that 'it is often unsatisfactory to merely copy an Italian garden but rather to achieve a sense of the informing spirit—an understanding of the gardener's purpose, and of the uses to which he meant his garden to be put.'¹ Wharton clearly was reacting to the ostentatious trends of the 'Gardenesque' period that appealed to the new wealthy class of Americans. She advocates, nay shames, the reader into taking a more intellectual and substantive approach to the Italianate garden model and to gardens in general.

¹ Wharton, Edith, "Italian Villas and Their Gardens", John Lane the Bodley Head, London, 1904.



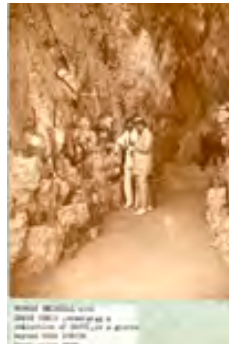
Capri Hillside



NBS field- looking south (www.NBS.org)

In 1915 Mabel's mother died and in that same year Mabel met and married George Cerio an English speaking Italian doctor from the Isle of Capri, Italy. It is no mistake that these two people found each other. Mabel and George both shared a love of the natural world. George's father, Doctor Ignazio Cerio, was a physician and an avid collector of over 20,000 naturalistic and archaeological finds gathered mainly on the Isle of Capri.² His collection included a herbarium, a zoological collection, geological specimens, and paleontological material which included a carboniferous plant collection.³ His entire collection is currently housed at the Centro Caprense Ignazio Cerio in Capri, Italy which was co-founded by Edwin Cerio, George's brother, and Mabel Norman Cerio, his wife of over thirty years.⁴ I like to think of young George with his brothers Edwin and Arturo, following his father, Ignazio, around Capri looking for fossils and discussing the unique geological formations especially the Faraglioni rocks that jut out of the Tyrrhenian Sea at the Gulf of Salerno. There is no record of Ignazio visiting his son at Paradise Farm in Middletown, Rhode Island but if he did I'm sure he would have been delighted and impressed by the puddingstone ridges of Paradise Valley and Hanging Rock.

² www.biologiavegetale.unina.it/delpinoa_files/46_107-116.pdf
³ Ibid.
⁴ Ibid.



Ignazio Cerio
 Faraglioni rocks, Isle Capri, Italy
 Hanging Rock, Middletown, Rhode Island



Villa San Michele. Capri

Development of Mabel's Garden

PARADISE FARM AND THE COLONIAL REVIVAL STYLE (late 19th and early 20th centuries)

The Colonial Revival was an eastern American regional style of architecture and design. Born of nationalistic pride and influenced by the 1876 Centennial Exhibition in Philadelphia, Colonial revival was a response to industrialization, a trend towards the nostalgic and an appreciation of simpler times.¹ “The style was popularized by landscape architects including Arthur Shurcliff, Ralph Griswold, Alden Hopkins, Ellen Shipman, Charles Gillette, and Morley Jeffers Williams. The Colonial Revival style is found in public parks, institutional grounds, and residential designs.”²

There were many styles of architectural design at this time; The Ecole de Beaux Arts in Paris graduated architecture students returning to America to design for the wealthy captains of industry. The Italianate style was popular as well but the most popular and enduring style in the northeast was the Colonial Revival style. “The Colonial Revival style in Landscape Architecture was often based on Dutch and British examples. The gardens were compact, well-ordered, and symmetrical. Perennials, herbs, and flowering trees were located in close proximity to homes.

Blending formal elements including parterres, allées, and cruciform plans with informal kitchen gardens, the style is both organized and relaxed. Geometric beds often are enclosed by low walls and accessed by axial paths. Highly detailed planting plans create year-round interest and vertical dimensionality by employing low-maintenance ground cover, flowering shrubs, and canopy trees, often organized to frame significant views. Pergolas, arbors, fountains, sundials, stone walls, precisely laid brick walkways, and clipped boxwood hedges are popular elements found in Colonial Revival gardens. Rusticated materials and antique elements provide a sense of permanence and heritage.”³

In the fall of 1915 Mabel and George married and set about the task of renovating Paradise Farmhouse for their summer residence. The architectural firm of Clarke and Howe were hired to renovate the house in the Colonial Revival style popular at that time.⁴ There is no record of the garden at this particular time but Mabel and the architects certainly would have given a great deal of thought to the relationship between the architecture of the farmhouse and the adjacent garden. Mabel's love of nature and art and her exposure to world class European and American

garden design would have inspired her to create a garden of her own. She may have grappled with her knowledge of Italian gardens and her love of the New England rural farm vernacular; what would be considered too much? What suited the site? Pots and plants may have been smuggled in from Italy in the hopes that a Bougainvillea might last the summer at Paradise Farm. Mabel's family home ‘Belair’, while bucolic in plan, may have seemed too formal or contrived for her taste. The Colonial Revival style, with its casual elegance, would have been well suited to Mabel's life at Paradise Farm.



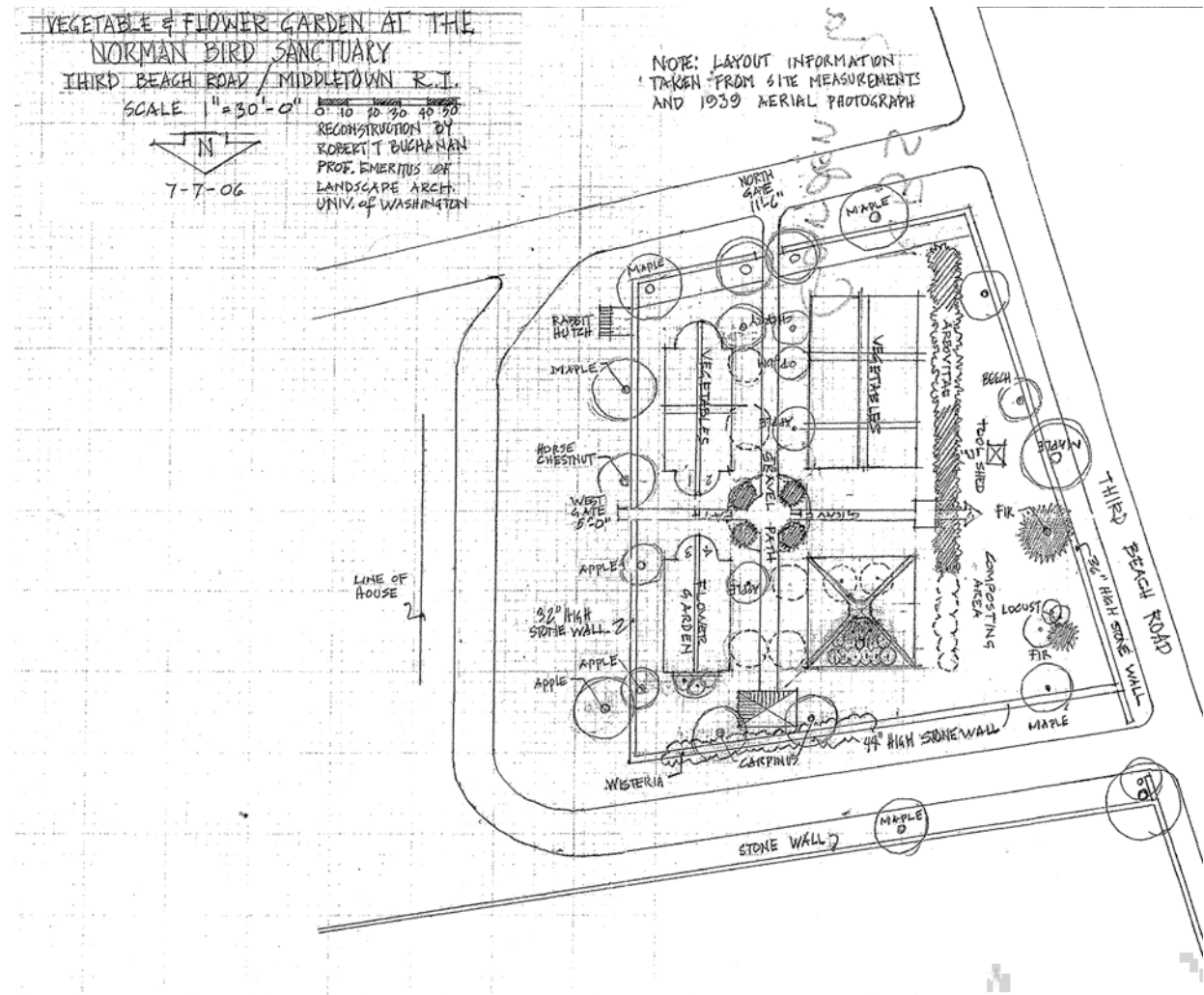
Mabel in a garden—possibly at ‘Belair’
(NBS Archives)

¹ <https://tclf.org>

² Ibid.

³ Ibid.

⁴ http://www.preservation.ri.gov/pdfs_zips_downloads/national_pdfs/middletown/midl_smith-gardner-norman-farm-hd.pdf



"Vegetable and Flower Garden at The Norman Bird Sanctuary" 1939 garden reconstruction by Robert T. Buchanan 2012
(NBS Archives)

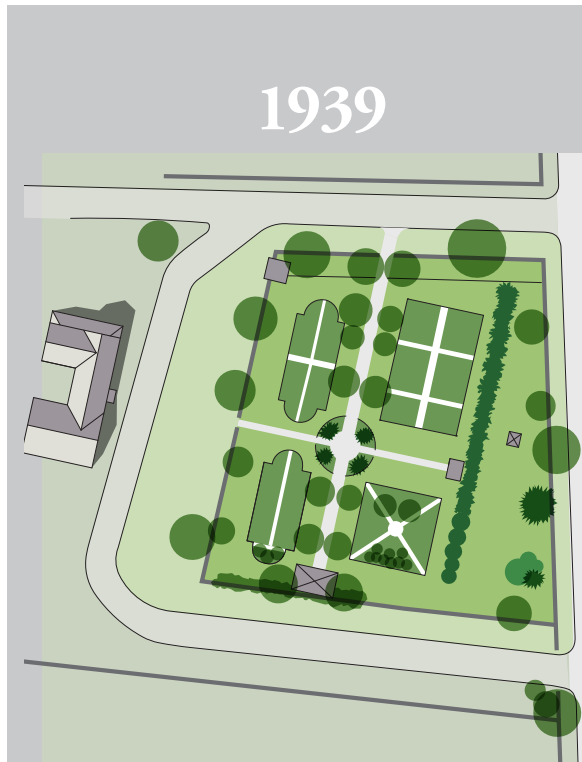
Development of Mabel's Garden

The development of Mabel's Garden follows the development of the campus from a colonial farm to a summer estate and then the Norman Bird Sanctuary campus. The following diagrams document either archival sketches or aerial photographs found from particular years.

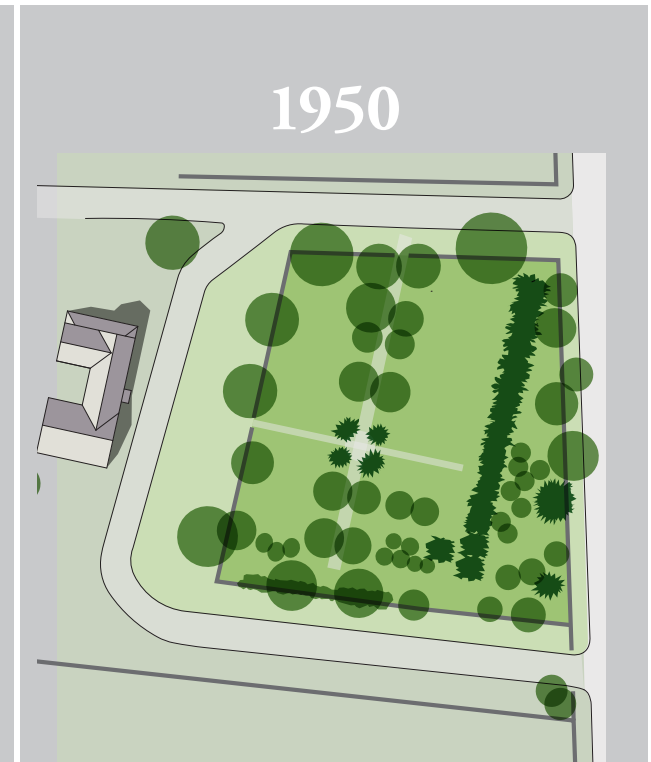
Before Mabel's father, George Norman, purchased the farm for his Newport Water Works project, one could assume that what is now Mabel's Garden was always either a sheep pen or a kitchen garden. This garden combined with the Orchard and Agricultural Fields compose the coastal New England vernacular "Salt Hay Farm".

Sometime around 1886, George Henry Norman, Mabel's father, gave each of his sons a piece of land and \$250,000.¹ Mabel's father died in 1900, and in 1908, at the age of 33 and unmarried, Mabel purchased Paradise Farm from her brother George's estate. Seven years later she married George Cerio and renovated the Farmhouse and possibly the gardens to the Colonial Revival style. The cardinal axis paths and center circle as well as several trees are all that remain of Mabel's Garden plan today.

¹ Jones, Daniel W. Jr and Yarnell, James L. (2012) "Some Memories of Kittymouse," *Newport History*: Vol.81: Iss.267, Article 2. p.20



The 1939 diagram depicts the garden under the stewardship of Mabel Norman. The cross-axial layout of the garden paths and the shaped planting beds would have been in keeping with the Colonial Revival style. The garden beds would have had flowers for cutting and enjoyment in the garden. Vegetables and herbs would also be grown for the dining table. The garden was squared-off by an arborvitae hedge which hid the tool shed and composting area. There were two outbuildings which terminate the east and south axis, possibly for reading and shade.



By 1950 (eleven years later) one year after Mabel's death, the garden beds appear to have been eliminated possibly due to lack of interest or simply a lack of funds. The horse chestnut and apple tree at the west garden entrance still remain as do the fruit trees on the north/south axis. The pair of ironwoods which terminate the south axis remain as well.

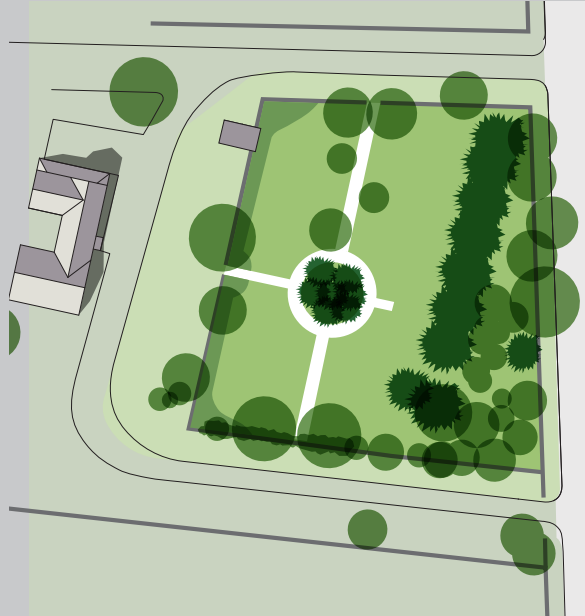


1971



By 1971, very little of the original garden design is evident. The east side along the road edge has continued to fill in with naturalized trees. The four boxwoods in the center circle remain as do significant maturing trees along the border including, the horse chestnut, two ironwoods, apples and maples.

1997



The 1997 diagram shows significantly more trees (invasives) on the east side of the garden. The axial paths have been restored and a path has been installed around the existing central planting area mimicking the original plan. Planting beds have been established along the west stone wall. The original evergreens shown on the 1937 plan have continued to mature in the central circle planting area.

2014



The 2014 diagram shows the existing conditions of Mabel's Garden after extensive removal of invasives and storm damaged trees to the east and the removal of large evergreens in the central circle. The arborvitae hedge has been removed. A large cast iron urn is located in the center circle. The center circle and axial paths are made of decomposed granite contained by steel edging. New gates have been installed at the north and west stone wall openings.

Development of Mabel's Garden

WHAT WOULD MABEL DO IN HER GARDEN TODAY?

Mabel's love of nature and art led her to the purchase of Paradise Farm from her brother George in 1908. Her love and appreciation of this special place prompted her to leave a legacy of stewardship which is the Norman Bird Sanctuary today. Her mission clearly states that the property should be;

"for the propagation, preservation, and protection of birds, and where birds and bird life may be observed, studied, taught, and enjoyed by lovers of nature and by the public generally so interested in a spirit of humanity and mercy."

If Mabel lived today she would continue to carry out this mission. Much has been learned about birds and their migration, habitat and breeding and many laws have been enacted to protect them but observation and study are still the best teachers.

Colonial Period (1492-1763)

There are two important periods in history for Mabel's Garden. The first is the Colonial Period. There are no clear records of this period but one could assume that the garden was a typical colonial kitchen garden, set close to farmhouse and walled and planted with vegetables, medicinal herbs, and plants for making textiles.¹ Mabel's brother Bradley owned Prescott Farm in Portsmouth, RI which is currently owned by the Newport Restoration Foundation.² They have a colonial kitchen garden and herb garden which is maintained by the URI Master Gardener's Program.

Colonial Revival Period (1900-1940)

The second important period is the 1915 Colonial Revival restoration of Paradise Farmhouse. If the garden was also renovated to this style then it would be most similar to the 1939 plan documented by Robert T. Buchanan in 2006 from an aerial photograph. If this were the case,

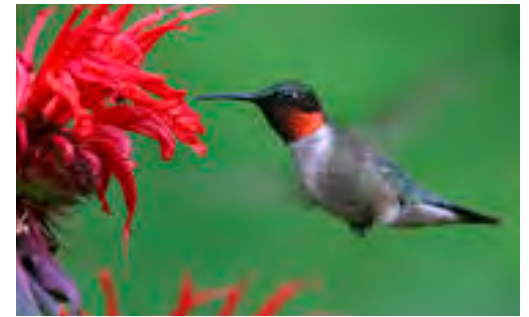
then garden would enhance the significance of the Farmhouse architecture and the site which received NRHP status in 2008. This garden plan is in keeping with tenants of the Colonial Revival style and it's complete restoration would provide a garden for the public to enjoy and to learn from as a significant period in garden design history. If Mabel's garden is restored in this manner it would not be possible to have weddings or other events because of the interior locations of the planting beds (See Appendix) and ongoing maintenance would be cost prohibitive.

Mabel's Vision (1949-Present)

The third option, and perhaps the one most in keeping with Mabel's mission for the Norman Bird Sanctuary, is to continue to look for innovative ways to communicate her vision of a place where the public can discover birds and wildlife in their native habitat, where flora and fauna are displayed as a symbiotic and unique Rhode Island native ecosystem. Mabel's garden could be programmed as an educational garden, planted with Rhode Island native plant species which would provide food, habitat



Worker honeybee visiting a thistle
en.wikipedia.org



Male ruby-throated hummingbird visiting beebalm
fiddleheadcreek.com photo courtesy Larry Master, www.masterimages.org



Monarch visiting butterfly weed
www.ohio-nature.com

¹ Emmet, Alan, "So Fine a Prospect: Historic New England Gardens"; University Press of New England, Hanover, NH; 1996.

² Jones, Daniel W. Jr and Yarnell, James L. (2012) "Some Memories of Kittymouse," *Newport History*: Vol. 81: Iss. 267, Article 2.

and nesting material for birds and insects but especially “Priority” or endangered migratory birds and butterflies (See Appendix Audubon). This would provide an opportunity for the public to get an up-close look at birds, butterflies and insects as they feed. Plant species and bird species signage could educate gardeners on what to plant to bring birds and butterfly’s into their home gardens thereby promoting the creation of more habitat on Aquidneck Island and outlying areas.

From a design perspective the planting beds could hug the perimeter of the garden, as they do now on the west side. The center circle and cardinal axes from the original garden, as well as some of the original trees should remain as remnants of the 1915 Colonial Revival design (see 1939 plan).

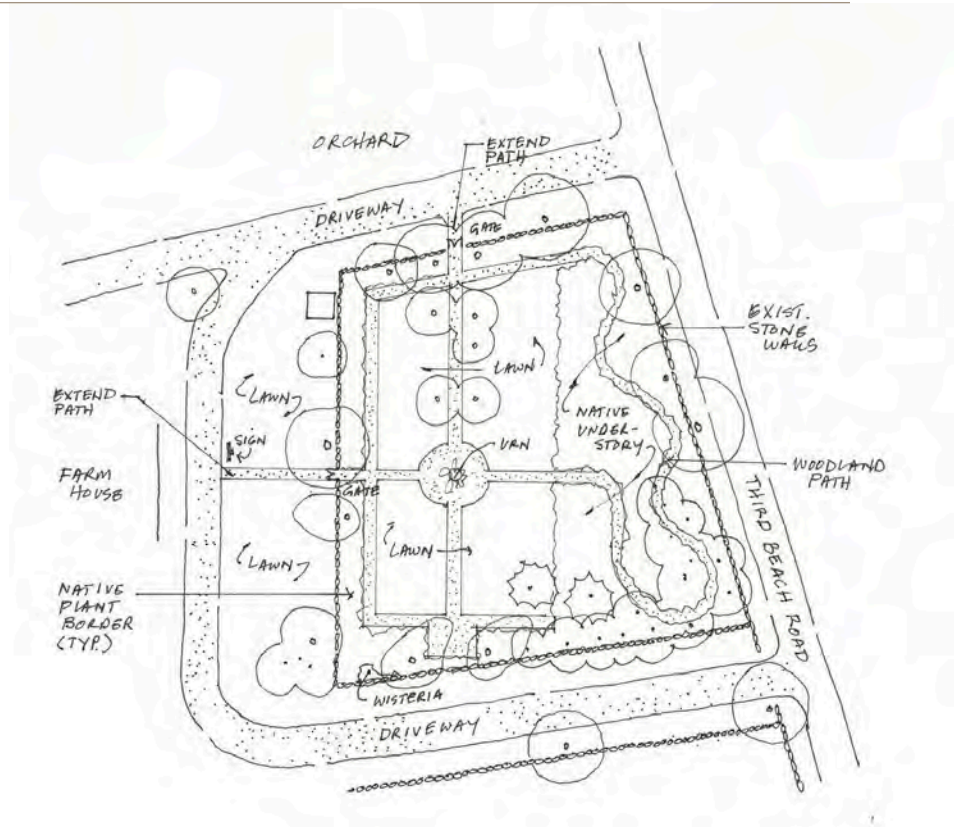
A new path from the driveway into the garden at the west entrance as well as a new perimeter path at the garden beds will provide accessibility to all visitors. The center circle should be the same material as the paths, and the cast iron urn may remain with seasonal plantings (Mabel would have liked an Italian accent in the garden

and it would speak to her husband, George Cerio’s Italian heritage).

Fruit trees or ornamentals could be replanted along the north branch of the axial paths in keeping with the 1939 plan. These trees would provide some shade for the garden and would not impede views or encroach on the wedding & event area.

In the east part of the garden, where invasive clearing has occurred, a meadow has come up. I agree with the inclination to square-off the garden to give it some symmetry and a place for composting (see 1939 plan). This area could also be planted with native trees and an understory of viburnum, blueberry, buttonwood, etc. for feeding and nesting birds. A meandering path would add additional interest for the visitor and speak to native understory forest structures.

The east terminus of the cross axis lacks emphasis. A specimen tree, arbor or seating are some options. Additional seating, perhaps colorful loose tables and chairs, throughout the garden would encourage visitors to come in, rest and observe nature.

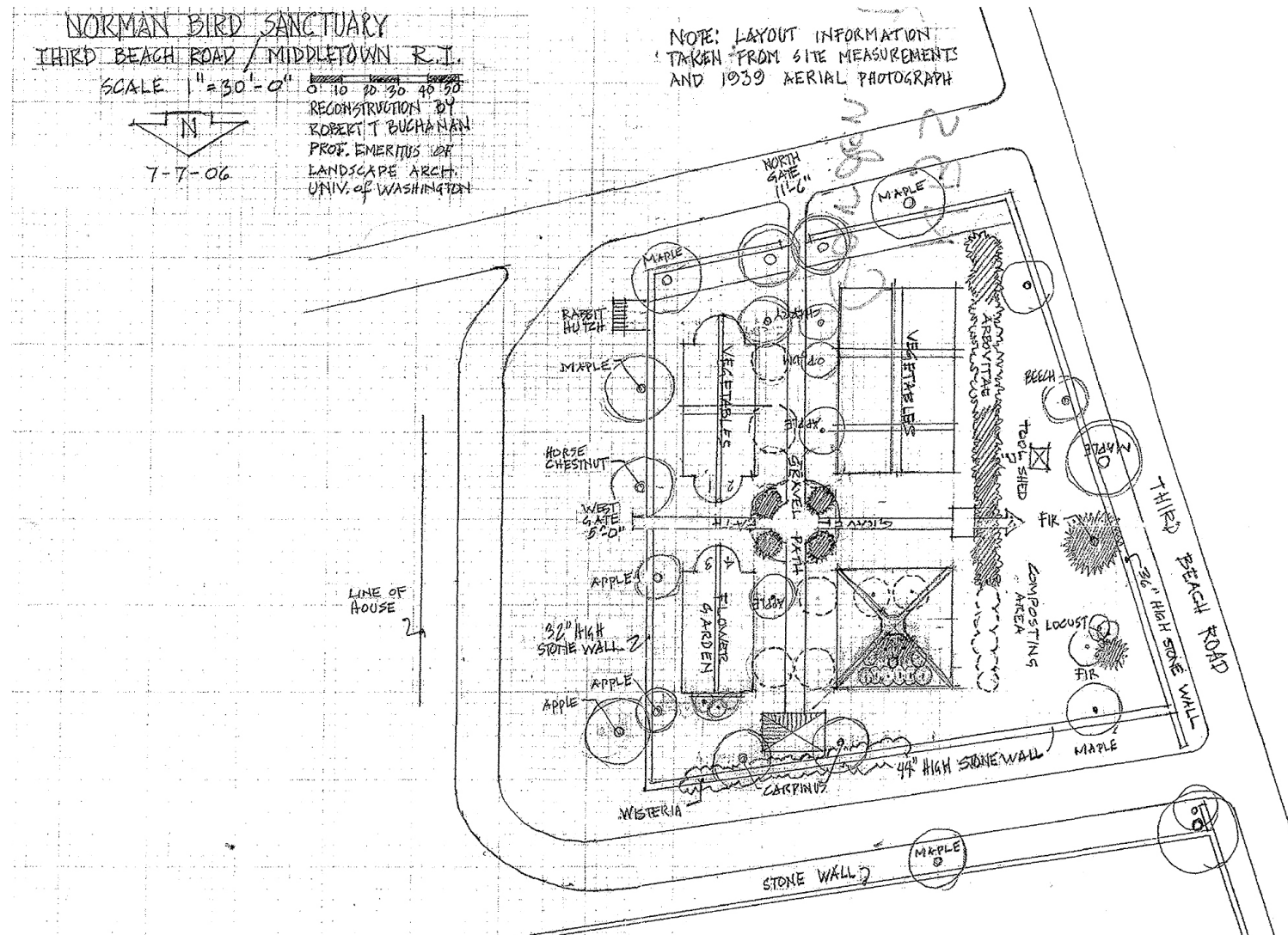


Proposed design for native species education garden - copyright 2014 Place studio.

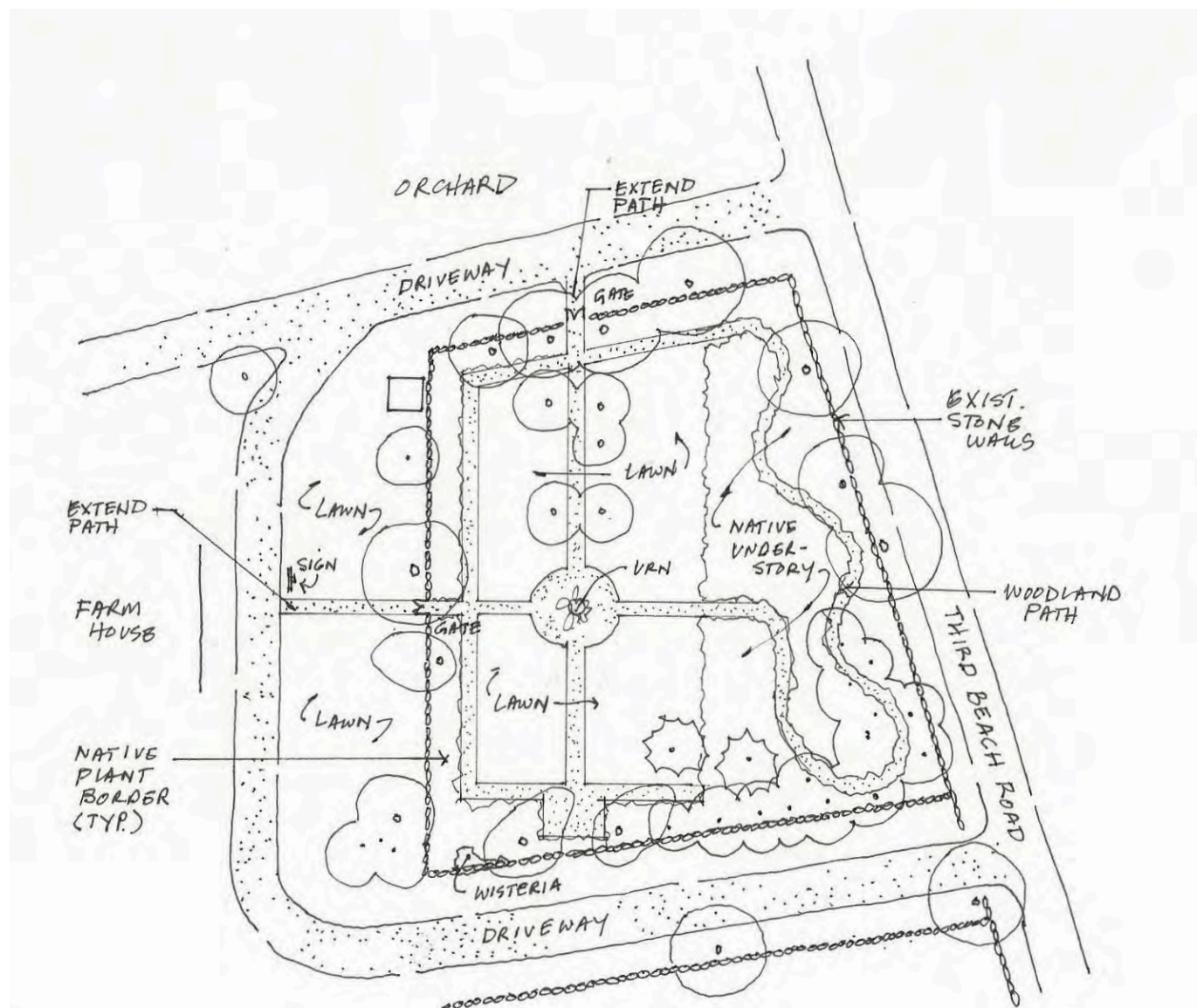


<http://www.fermoblittlegworld.com/uk-a-parisian-jaunt/>

Development of Mabel's Garden

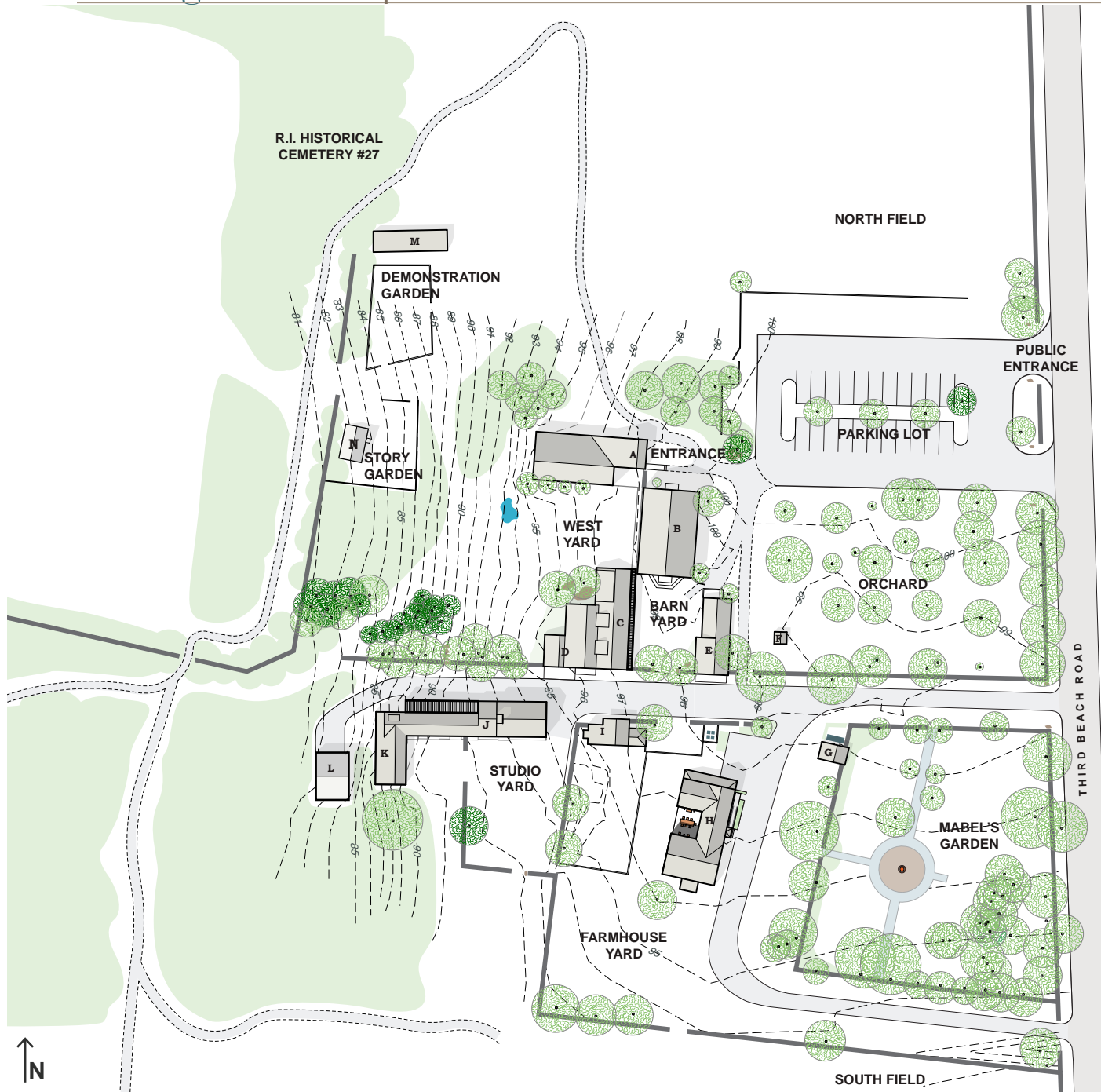


"Vegetable and Flower Garden at The Norman Bird Sanctuary" 1939 garden reconstruction by Robert T. Buchanan 2012 (NBS Archives)



Proposed design for native species education garden.

Existing Conditions | COMPREHENSIVE CAMPUS BASE MAP



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

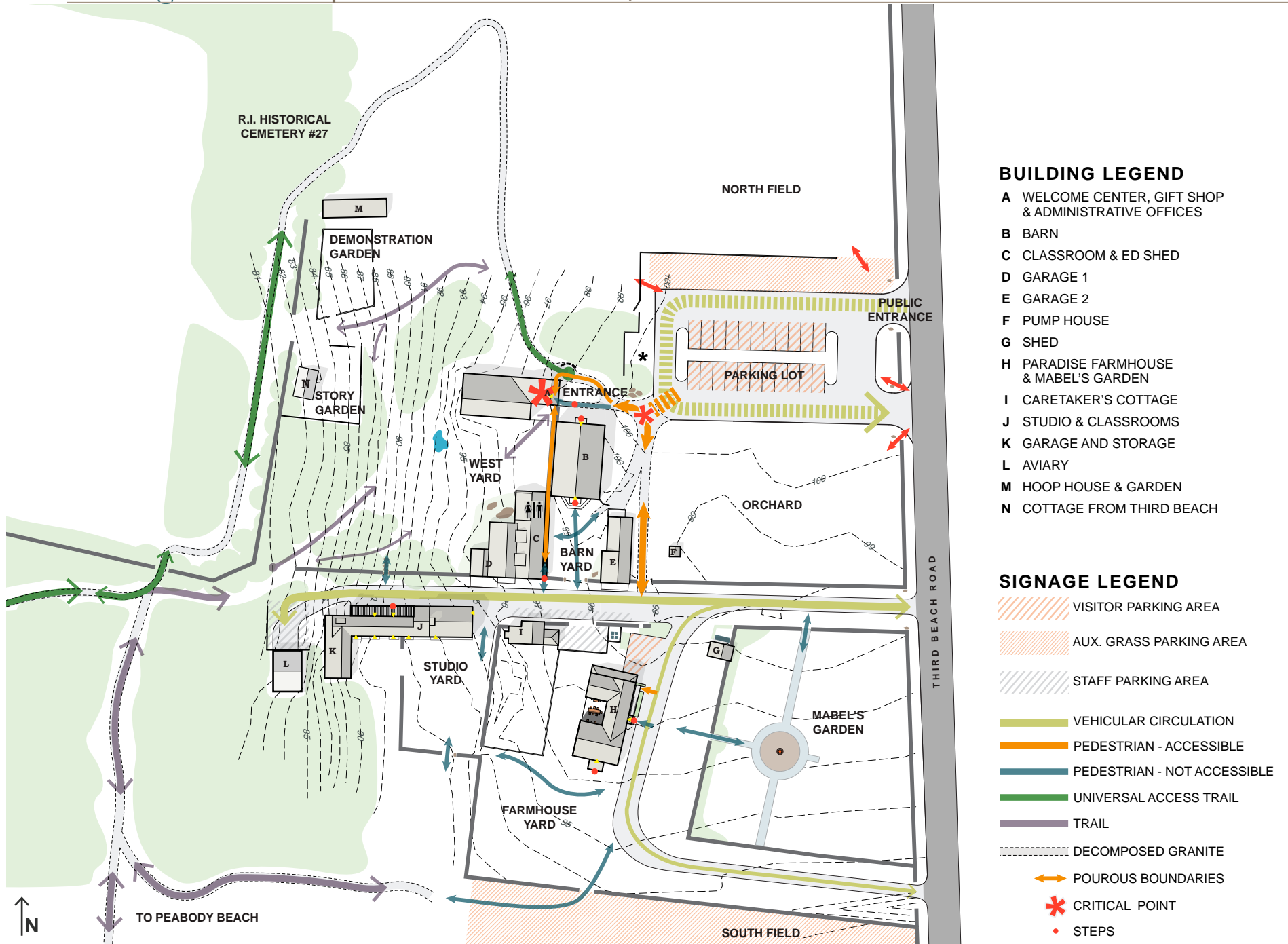
Existing Conditions

The Norman Bird Sanctuary (NBS) requires campus amenities for its visitors and for the daily functioning of all its educational and event programming. For the most part the NBS presents a good experience to the public. Improvements are needed to signage and lighting. Coordination of these elements is needed to maximize ease of access for all visitors with mobility and sight impairments. A comprehensive signage and wayfinding system is recommended to assist visitors with the location of buildings, restrooms, events and trails. Analysis of topography and hydrology will determine the best location for accessible paths and drainage away from buildings and building entrances for visitor and staff.

Small scale farm artifacts, trash bins, and memorial dedications among other items have also been documented. Seating options have been assessed for quantity and ease of use for large and small groups.

Tree and tree management on the campus is of the utmost importance from a historical perspective. The Orchard and some trees in Mabel's Garden, have cultural significance and therefore require a management plan for the health of all the trees. The location, identification and condition have been recorded and a recommended strategy for replacement has been proposed that over time replaces invasive tree species with native species. Perennial planting throughout the campus will be limited to Mabel's Garden and the Main Entrances to the Farm House and Welcome Center, and the Demonstration Garden.

Existing Conditions | CIRCULATION, ACCESSIBILITY AND PAVING

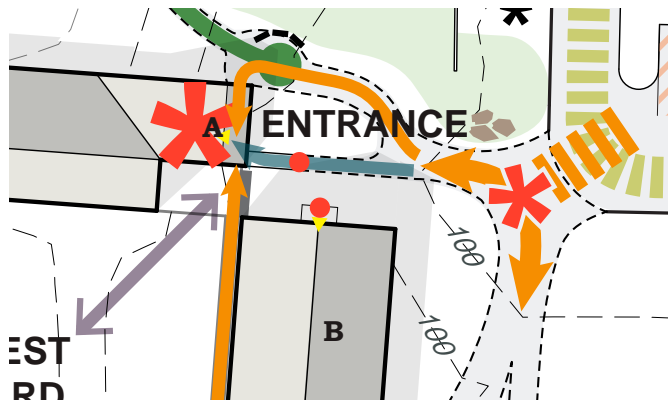




ARRIVAL

Visitors to NBS driving, walking or biking are directed to use one universal public driveway entrance at the gravel parking area on Third Beach Road. Three other driveway entrances south of the public entrance are, from north to south, the public exit; the service drive, used primarily by staff; and the farmhouse driveway entrance, also used primarily by staff.

Bicycle parking is available on the west side of the parking lot just north of the main entrance path at the southwest corner of the parking lot.



WALKWAYS & PATHS

The entrance path connects visitors to the Welcome Center and sign-in and to the Barn Museum and trails. The existing walkway west to the Welcome Center has two steps with an alternate sloped path to the north. This sloped entry path connects to the trails (future Universal Access Trail), bypassing the Welcome Center. The entry area is a problem for the organization in that people cut through to the trails bypassing the required sign-in at the Welcome Center. An accessible, concrete walkway from the Welcome Center doors to the Ed Shed and restrooms to the south terminates at the service drive with three steps.

Another path from the driveway to the south, along the side of the barn connects to the service drive and Paradise Farmhouse. A fork to the south-west connects with the Barn Yard through a gate which is typically locked, again to prevent cut-throughs. Garbage bins are located here.

Mabel's Garden has an interior cross axis path of crushed bluestone but the paths are not fully accessible to either the west or north garden gates.

All public campus buildings have accessible entrances available with the exception of the Barn which has steps at both primary entrances.

[NOTE: Trails are not included in this report]

Overall Recommendations

CAMPUS CONNECTIONS

The campus buildings and outdoor spaces must be ADA compliant at minimum.

Off- Campus sites will continue to have limited accessibility.

Maintain the historic character of the campus as much as possible.

View corridors must be maintained.

A comprehensive signage plan will direct visitors.

TRAIL ENTRANCES

New design for visitor entrance will direct visitors to sign-in at Welcome Center and trail head.

A comprehensive signage plan will direct visitors.

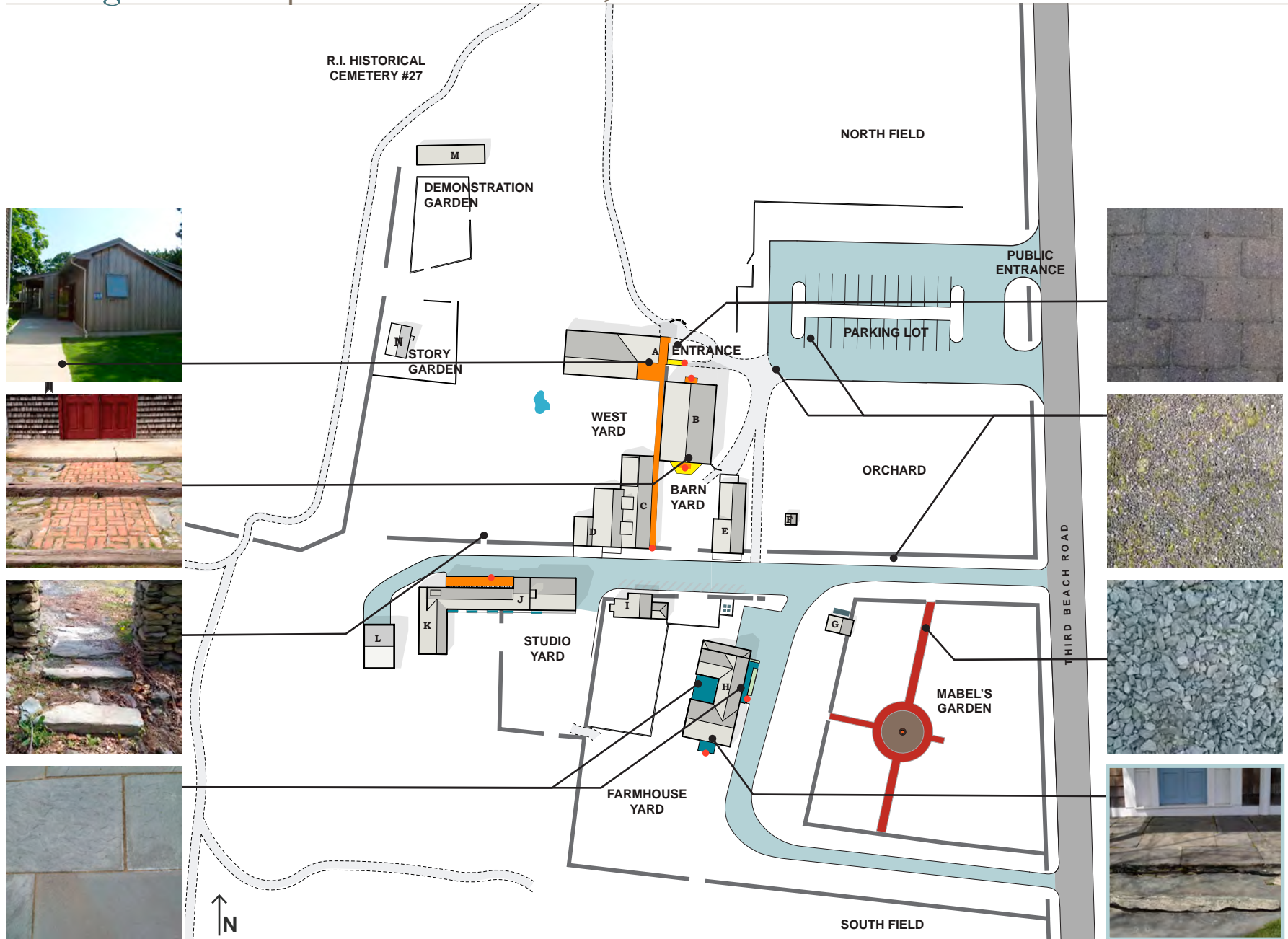
Consideration should be given to access at the southwest corner of the West Yard and the interior road which connect to the trails.

Weekend volunteers can help get people to sign-in and direct them to where they need to go.

TRAIL ENTRANCES

The proposed Universal Trail will begin at the north side of the Welcome Center following the existing trail until it connects to the decked pond trail.





Existing Conditions | CIRCULATION, ACCESSIBILITY & PAVING



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

PAVING MATERIALS LEGEND

-  DECOMPOSED GRANITE
-  GRAVEL(?)
-  CONCRETE PAVING
-  PECKHAM BLUESTONE CHIP
-  WOOD CHIPS
-  MISC. PAVING MATERIALS
-  BLUESTONE PAVING
-  LAWN
-  STEPS

SECURITY & ENTRANCE POROSITY

During off hours, the driveway entrances along Third Beach Road are secured by a wire line. The wires are not locked and they do not prevent pedestrians from entering between the walls and posts.

Along the north and west sides of the Parking Lot, a rustic split rail fence does not enclose the Parking Lot completely leaving gaps in the fencing. This fence, the lack of directional clarity at the entrance path, and the trail access at the Welcome Center together mislead visitors about access and entrance.

PAVING

The paving materials used in and around NBS vary in quality, condition, and character. The pallet of materials includes; crushed local bluestone for the parking facilities, as well as vehicular and pedestrian circulation, crushed bluestone in Mabel's Garden; bluestone paving for the Paradise Farmhouse patio and entrances, brushed concrete for building entrances and staircases, crushed stone along the classrooms and studio building, and flat stepping stones for entrances between walls. Some openings in the stone wall have crushed fines. Some building entrances, such as the south entrance to the Barn Museum and the entrance stairs to the Welcome Center are constructed from a variety of materials. The connection, from the Welcome Center/entrance to the restrooms is made of concrete.

Overall Recommendations

SECURITY

Porosity at the perimeter of the NBS property should be monitored and tightened up as needed.

Driveway entrances along Third Beach Road should be chained and locked.

Additional planting at northwest corner of Parking Lot will deter visitors from cutting through to trails.

WALKWAYS & PAVING

Use a palette of permeable materials for paving throughout the NBS campus. This material must be accessible and may be different from the trail material.

The Welcome Center must be fully accessible. Due to water collection outside the entrance, this area must be regraded and redesigned.

Mabel's Garden two entrances should be accessible from the Farmhouse and at driveways.

The Barn requires new ramps at both the north and south entrances. Additional doors into the barn will be locked.

Consistency and hierarchy of materials for different uses is another wayfinding device. The NBS campus should be sensitive to evoking its historic character while providing safe, easy to understand access to its buildings and outdoor spaces.

PROGRAMMING & EDUCATION

Norman Bird Sanctuary has a comprehensive and wide range of programs and nature education programs for all age groups.

Stewardship plays a central role in all educational programing. NBS provides education for the community in the natural sciences including geology, biology, ecology, and sustainability.

NBS offers day camp programs through the summer for children from age 3.5 through 18. The camps offer hands-on learning, games, animal encounters and team building. Camp groups utilize the 325 acre outdoor classroom and are held in small groups with Teacher Naturalists.

Education programs are designed to introduce young children to the great outdoors, help school teachers supplement their own science, history and art curricula, and engage advanced learners in the principles of ecology, wildlife biology and species conservation.

In addition to School Outreach, Field Trips and After School programs, the NBS offers Community Outreach for all ages including; nature-based Birthday Parties, and Scout Badge programs. Adult and family programs include Ed Talks, guided hikes and bird walks throughout the year.

Overall Recommendations

PROGRAMMING

Promote “up-close” public interaction with birds, butterflies and small mammals and reptiles. For instance, a small aviary at the entrance near the barn would allow visitors to greet the two hawks or the owl when they come in on weekends. The Barn Museum could become a “nature lab” where people can study and sketch pieces of the nature collection.

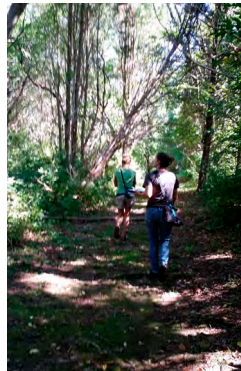
Additional programs could be specific to endangered or threatened species such as Monarch butterflies. A butterfly farm in the west campus area would be ideal.

There is currently no place on the island to take injured wild animals. NBS might consider providing guidance to the public as to where they can find assistance or who to call.

Additional opportunities for native plant species education will be available at Mabel's Garden and the Welcome Center entrance.



Classes



Hiking and observing nature

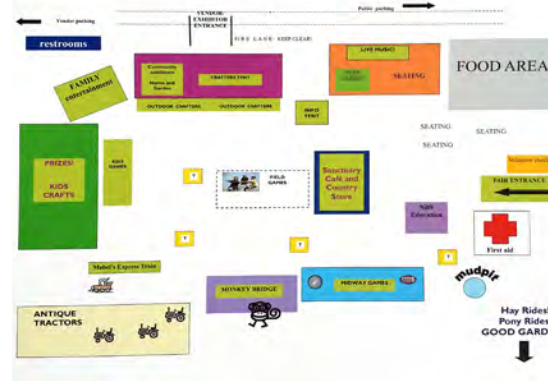


Exploring “Teddy Rock”

EVENTS & EXHIBITIONS

The Norman Bird Sanctuary has a comprehensive and wide range of seasonal events for families, groups and individuals. The Harvest Fair is the crown jewel in a series of annual fundraising events for the NBS. Additional annual fundraising events include: Mabel's Table, Beach Bake, 5k Walk/Run, and the Bird Ball among others.

With the renovation of Paradise Farmhouse, the NBS campus has a manageable range of offerings for group rentals and plenty of space for different group events including weddings and family reunions.



Overall Recommendations

EVENTS & EXHIBITIONS

Additional events might include art shows focused on landscape and nature by artists, sculptures and site specific artists.

Collaboration and exchange of archaeological and nature exhibits might be promoted between the Centro Caprese Ignazio Cerio in Capri and NBS.

SITE RENTALS

Site rentals should be limited to the NBS main campus however Peabody's could be considered for private clambake rentals (in addition to 'Bake on the Beach') as there are few rentals of this kind on the island.



Harvest Fair 2014



Photo- NBS event



Photo- NBS event

Existing Conditions | TOPOGRAPHY & HYDROLOGY



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

TOPOGRAPHY & HYDROLOGY LEGEND

- < 5% SLOPE
- 5% - 10% SLOPE
- > 10% SLOPE
- PERVIOUS
- SOMEWHAT PERVIOUS
- IMPERVIOUS

TOPOGRAPHY

The east side of the property from the North Agricultural Field to South Agricultural Field, and encompassing much of the campus buildings, is a relatively flat area sloping down to the south gently and more steeply down to the west. The lawn, connecting the Welcome Center, southwest to the trail entrance is relatively steep with a slope no less than 5% grade, and in areas, exceeding 10% grade. This is considered challenging for average pedestrians. Areas including the Parking Lot, Orchard, Paradise Farmhouse, Mabel's Garden, and fields to the south are less than 5% grade and as a result, are easily walkable for average pedestrians. The level ground in this area was a logical choice for siting the Farmhouse, Garden, Orchard and outbuildings for good drainage, views, access, and practicality.

HYDROLOGY

Water on site follows the topography down hill to the west and south. A 5-10% slope at the Welcome Center's east facing entrance creates a water collection area. Other structures located in the sloped portion of the campus may have similar drainage issues on the east facing side of the structure.

The trail system entrance at the bottom of the grassy slope may be exceptionally muddy after heavy rain and will require remediation. The west end of the Service Drive may be prone to erosion where the slope is greatest.

Overall Recommendations

WALKWAYS & PAVING

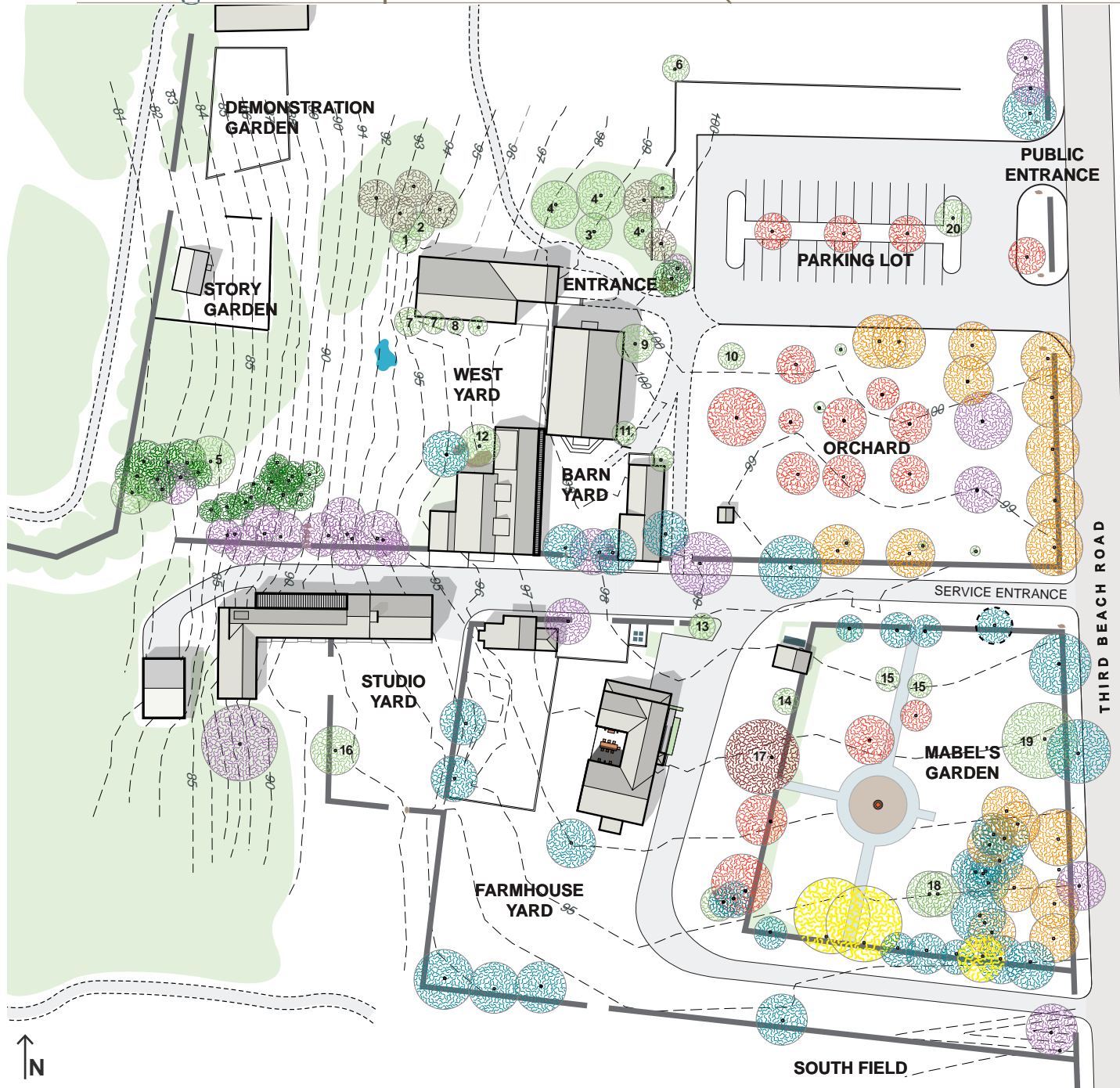
Use consistent permeable materials for paving throughout the NBS campus. This material must be accessible and may differ from the trail material.

The Welcome Center must be fully accessible. Due to water collection outside the entrance, This area must be regraded. *See entry design.

Mabel's Garden two entrances should be accessible from the Farmhouse and driveway.

The Barn requires new ramps at both the north and south entrances.

Existing Conditions | VEGETATION (TREES AND INVASIVES)



TREE LEGEND

- 1 *Malus sp.* apple tree
- 2 *Acer platanoides* Norway maple
- 3 *Acer pseudoplatanus* sycamore maple
- 4 *Robinia pseudoacacia* black locust
- 5 *Picea sp.* spruce
- 6 *Juglans cinera* butternut
- 7 *Carpinus caroliniana* hornbeam
- 8 *Cornus florida* dogwood
- 9 *Castanea sp.* edible chestnut
- 10 *Picea abies* Norway spruce
- 11 *Larix laricina* larch
- 12 *Pinus strobus* white pine
- 13 *Fagus sylvatica purpurea* purple beech
- 14 *Cornus mas* cornelian cherry
- 15 *Hammamelis virginiana* witchhazel
- 16 *Betula populifolia* grey birch
- 17 *Quercus bicolor* oak
- 18 *Cornus kousa* kousa dogwood
- 19 *Pinus nigra* black pine
- 20 *Ulmus sp.* elm
- 21 *Liquidambar styraciflua* American sweetgum
- 22 *Prunus sp.* cherry
- 23 *Picea pungens* blue spruce
- 24 *Aesculus hippocastium* horse chestnut
- 25 *Taxus media* yew
- 26 *Fagus grandifolia* American beech
- 27 *Abies balsamea* balsam fir

VEGETATION NOTES

Many of the trees on the Norman Bird Sanctuary Campus are in need replacement or pruning and would benefit from a long-term planting and maintenance strategy. Most of these are sycamore maples and Norway maples which are considered invasive. In 1997 brush clearing and tree removal occurred along Third Beach Road removing sycamore maples which were over-pruned due to their proximity to overhead utility wires. These trees were replaced with a variety of native species including oak, maple and shad. (NBS Newsletter Spring 1997) Trees planted too close to the existing stone walls have, in the past, and will continue to undermine the integrity of the walls which are considered contributing structures by the NRHP.

There are ornamental shrub and perennial plantings in small dedicated garden beds located throughout the campus and along the original stone walls.

Areas to the west of the parking lot and behind the Welcome Center are overrun with brush, and would benefit from some selective clearing and pruning to maintain visibility.

HISTORIC TREES

Some of the trees in Mabel's garden date back to as early as 1915 when she is thought to have re-designed the Garden. The horse chestnut, ironwoods and fruit trees are identified on the 1939 plan by Buchanan. Some of the Orchard trees are very old as well and it is known that orchards existed on the property since the Colonial era.

TREE DONATION PROGRAM

The NBS has continued to plant trees and to add apple trees to the Orchard over the years through their memorial tree donation program.

Overall Recommendations

CAMPUS PLANTING STRATEGIES

Replacement of trees along stone walls should be no less than 10 feet away from the historic stone walls on either side.

Other than Mabel's Garden, there should be no shrub or perennial planting beds along the historic stone walls.

All plantings in Mabel's Garden, in front of the Farmhouse at the Welcome Center entrance or any future location should be native and beneficial to birds and wildlife.

Iconic campus views and views to Second Beach and Paradise Valley should be maintained.

Invasive species should be monitored and removed periodically.

Proposed trees should be included in the Tree Donation Program but the species and location shall be determined by the program director.

CAMPUS TREES

Annual assessment of trees and pruning for deadwood, visitor safety and building safety.

As Sycamore maple and Norway maple trees decline they should be replaced with native non-invasive species. Sugar maples and red maples would be good substitutes along Third Beach Road at Mabel's Garden and the interior campus road.

Historic trees or iconic trees, ornamental or not, may be replaced in-kind.

ORCHARD

Annual assessment of fruit trees and pruning of deadwood and epicormic growth as necessary.

Replacement of trees in the Orchard should maintain a traditional grid or quincunx pattern.

Only apple trees, *Malus* sp., should be planted in the Orchard. Heirloom varieties are favored.

As the trees along the wall at Third Beach Road decline they should not be replaced in order that the Orchard reads as such clearly. Consideration may be given to this same strategy at the Agricultural fields.

MABEL'S GARDEN

Annual assessment of trees and pruning for deadwood, and visitor safety especially the twin ironwoods (*Carpinus* sp.) at the south wall where couples get married.

At least three additional fruit trees may be relocated along the north south access according to the 1939 plan. Maintain an appropriate area for wedding seating. Existing fruit trees may be replaced.

The north, west and south perimeter will be planted as a native perennial garden. The beds will be 6 feet wide minimum.

The east side of the garden will be planted with an understory plant ecology of native shrubs and trees.

All plant material should be chosen for their benefits to specific birds for either food, habitat, nesting material or all three.

INVASIVE SPECIES



Sycamore Maple
Acer pseudoplatanus

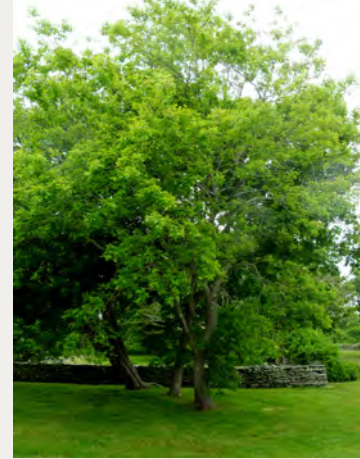
Sycamore maples grow extensively throughout the Norman Bird Sanctuary's campus. While not as invasive as the Norway maple, Sycamore maples tend to out compete native maple species, and are highly adapted to coastal ecosystems. Many of the Sycamore maples throughout the campus appear to be in decline, or appear to have suffered damage. As Sycamore maples age, the Norman Bird Sanctuary should consider phasing these trees out of the campus design.



Norway Maple
Acer platanoides

Norway maples are a non-native, invasive species that aggressively out competes native maple species, particularly the sugar maple, and posing additional threats to native ecosystems. Consideration of the campus's adjacency to many sensitive ecosystems, any Norway Maple tree in the area could be considered a threat however, according to the Horsley Whitten report 2014, they are not considered invasive on the NBS property.

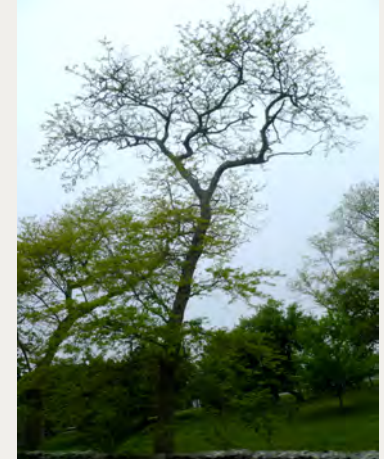
NATIVE SPECIES



Choke Cherry
Prunus virginiana

There are a number of choke cherry trees on the Norman Bird Sanctuary campus and many throughout the property. These trees are native and provide an important food source for birds and small mammals. There are two choke cherries located near the entrance to Mabel's Garden and within the garden there are another two that are in decline. There are others along the west wall of the campus at the trail entrance.

ROAD EDGE



Black Locust
Robinia pseudoacacia

Mature Black Locust trees contribute significantly to the east borders of both the Orchard and Mabel's Garden and seem to be in good condition. These trees do very well in this environment. Sycamore maples were removed along Third Beach Road in 1995 and replaced with oak, maple and shad.

HISTORIC TREES



Horse Chestnut
Aesculus hippocastanum

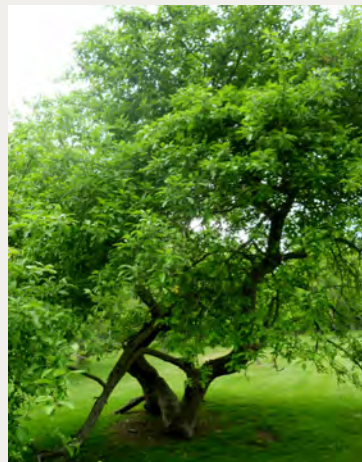
This horse chestnut tree is shown on the 1939 plan for Mabel's Garden and is the most important specimen tree on the NBS property. Now old and in decline, it is a landmark for those who know the Norman Bird Sanctuary well. A sweetgum has been planted next to it as a substitution. Consideration might be given for bracing this old tree so that it might withstand the elements and stay with us a bit longer.



Ironwood
Carpinus carolinia

The two ironwood trees on the south side of Mabel's garden are shown on the 1939 plan. There are several others along the wall on the south and east sides of the garden. Over time, exposure to the sea breeze has caused asymmetrical growth and developed great character in these trees. Weddings take place under these trees so pruning is essential for the safety of visitors. These trees do very well in this environment.

ORCHARD



Apple Trees
Malus spp.

There are 17 apple trees, 13 in the orchard, and 4 in Mabel's Garden. Of the trees in the orchard, nearly all of the mature trees are showing signs of age (cracked bark, hollow, dead limbs, crowding) but they are fantastic and greatly enhance the entrance experience at the NBS.

DEDICATIONS



Sweetgum
Liquidambar stolonifera

The Sweetgum tree was planted in 2007 as a dedication from Ruth and Bill Macomber. This particular tree was planted as a replacement for the horse chestnut which is in decline.

Existing Conditions | BUILDINGS & STRUCTURES



A Welcome Center / Administration

(built 2000. Architect Foster Associates) This building provides a variety of services for the Norman Bird Sanctuary. The entrance of the building serves as a welcome center and a gift shop for visitors of the Norman Bird Sanctuary. Guests are expected to sign in at this location upon entering the Norman Bird Sanctuary. This building houses administrative offices for the Norman Bird Sanctuary Staff.

B Barn and Museum Building

(built c. 1860. George Warren renovated the interior in 1981–NRHP contributing) For roughly its first century of existence, the barn was used for its original agricultural intent. After 1949 the barn became a natural history museum and also housed administrative offices. The building currently functions as a museum. Despite the changes in program, the barn building maintains its original architectural lineage.

C Classrooms/Ed Shed/Restrooms

(built 2004. Architect Foster Associates) This building contains classrooms and restrooms.

D & E Garages

(restored 2004) Currently used for storage.

F Pump House

(built in 2001) The pumphouse, located in the orchard, contains a large water pump.

G Shed

(built in 2001) Located just outside of Mabel's

Garden the shed is currently used for storage.

H Paradise Farmhouse

(built c. 1750. updated c.1782, 1915, 2013. Designed by Clarke and Howe 1915, Foster Associates 2013- NRHP contributing) Originally built by Isaac Smith, Benjamin Gardiner added a gabled kitchen and fireplace, as well as significant interior improvements in 1782. Samuel Allen, owned the Farmhouse from 1819 to 1869. Upon purchasing the house in 1908 from her brother, Mabel and George Cerio updated the property and used the Farmhouse as a summer residence between 1917 and 1943. The Farmhouse is currently being used as a retreat and event space.

I Caretaker Residence

(built early 20th century, updated 2005 Architect Foster Associates) This building dates back to the Norman Ciero era when it was used as a caretaker residence with laundry services. It remains the home of the caretaker.

J Studio & Classrooms *

(built 2001. Architect Foster Associates) This building replaced a similar building which was Mabel Norman's art studio. It currently houses the library and conference room used for meetings and events. The attached Classroom building to the west hosts camp and education programs.

K Garage and Storage

(built early 20th century) The campus' two car garage, along the interior service drive, was

Recommendations

The NBS would benefit from a small aviary at the entrance near the barn so visitors can greet the two hawks or the owl when they come in on weekends.

The garage/ shed across from the Ed Shed might find better use as a small cafe/gift shop with access from the parking lot. This would allow room for groups to gather inside the Welcome Center. This building may have additional uses for NBS camp or education staff.

likely built by George and Mabel Norman Cerio. The rear portion of this building is technically a separate 'carriage shed' structure. The east wall of the garage is fieldstone which functions as a structural wall for the carriage shed portion of the building. The garage is currently used for storage.

L Garage

(built early 20th century) The campus' two car garage, along the interior service drive, was likely built by George and Mabel.

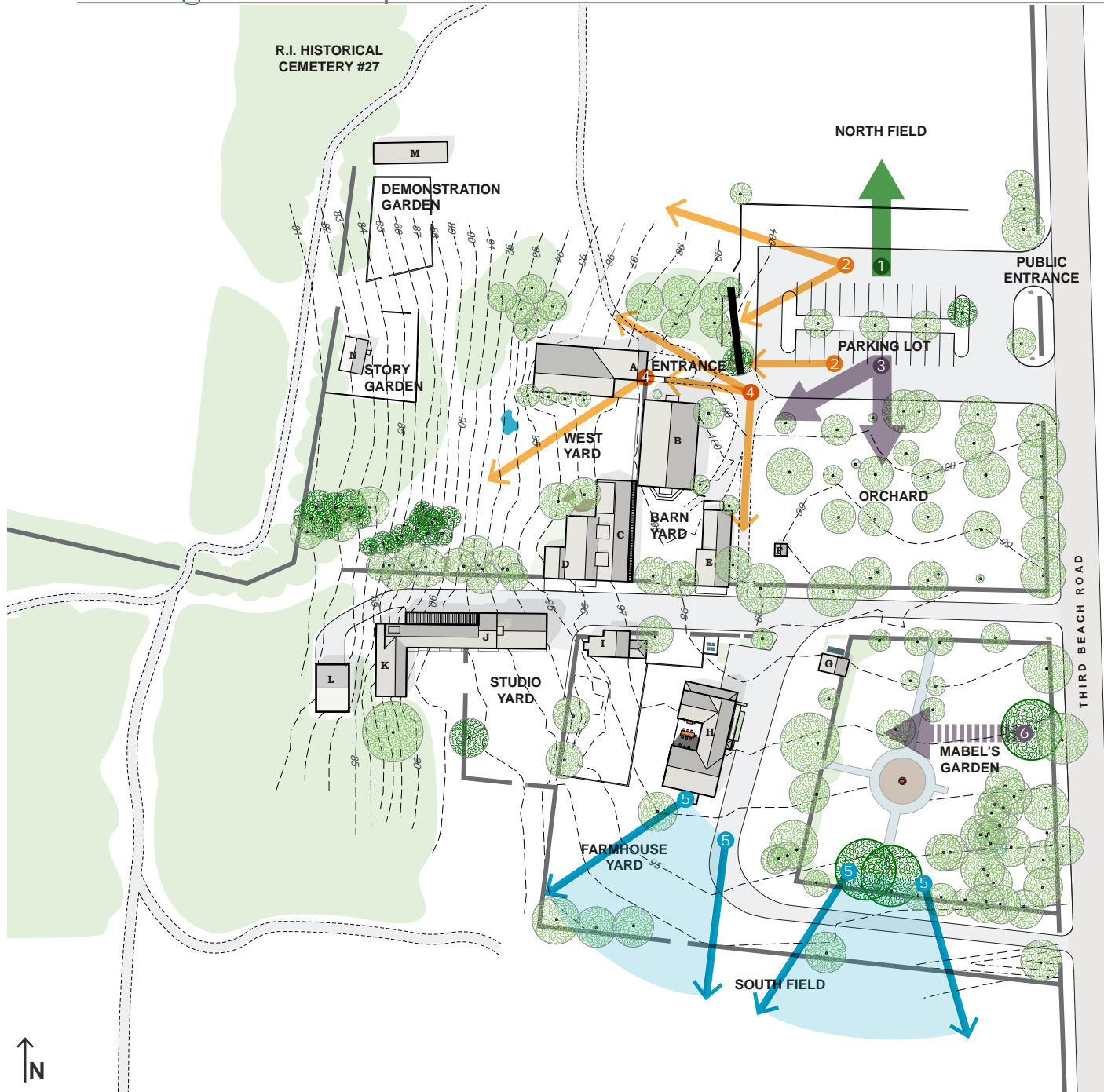
M Hoop House

(built 21th century) Semi-permanent structure next to demonstration garden used as a greenhouse.

N Third Beach Cottage

(built 20th Century) This cottage was originally one of several rental cottages located at which was moved from Third Beach.

Existing Conditions | VIEWS & VISTAS



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

VIEWS & VISTAS LEGEND

- ① AGRICULTURE
- ② ④ TO ENTRANCE AND TRAILS
- ③ ⑥ HISTORIC CAMPUS
- ⑤ VISTA SEA VIEWS

Views & Vistas

The main views and vistas from the NBS campus focus on the layout of the historic campus with its original 18th century buildings, the north and south fields and views to Gardiner's Pond, Second Beach and the Atlantic Ocean beyond.

FROM THE PARKING LOT

- ① The view of the North Agricultural Field from the parking lot represents an image of active hay farming in Middletown, RI in the colonial era.
- ② To the west, the view is open and inviting at the corner of the fence but the Welcome Center Entrance is lower in elevation than the driveway and obscured by planting.
- ③ To the south, the view takes in Paradise Farm's historic past including the Orchard, stonewalls, the Barn with glimpses to the farmhouse and garden.



View north from parking lot

WELCOME CENTER

- ④ A clear line of site and access to the Universal Access Trail to the north east and open view to the south-west wooded trail entrance conflicts with the institution's objective of guests "signing in" at the Welcome Center prior to walking onto the trail system.

FROM MABEL'S GARDEN & PARADISE FARMHOUSE

- ⑤ The unobstructed view south over the stone wall, across South Field to the ocean is the quintessential view defining NBS's extraordinary location.
- ⑥ A filtered view of the Farmhouse from under the large hornbeam tree in Mabel's Garden.



View south to Atlantic Ocean

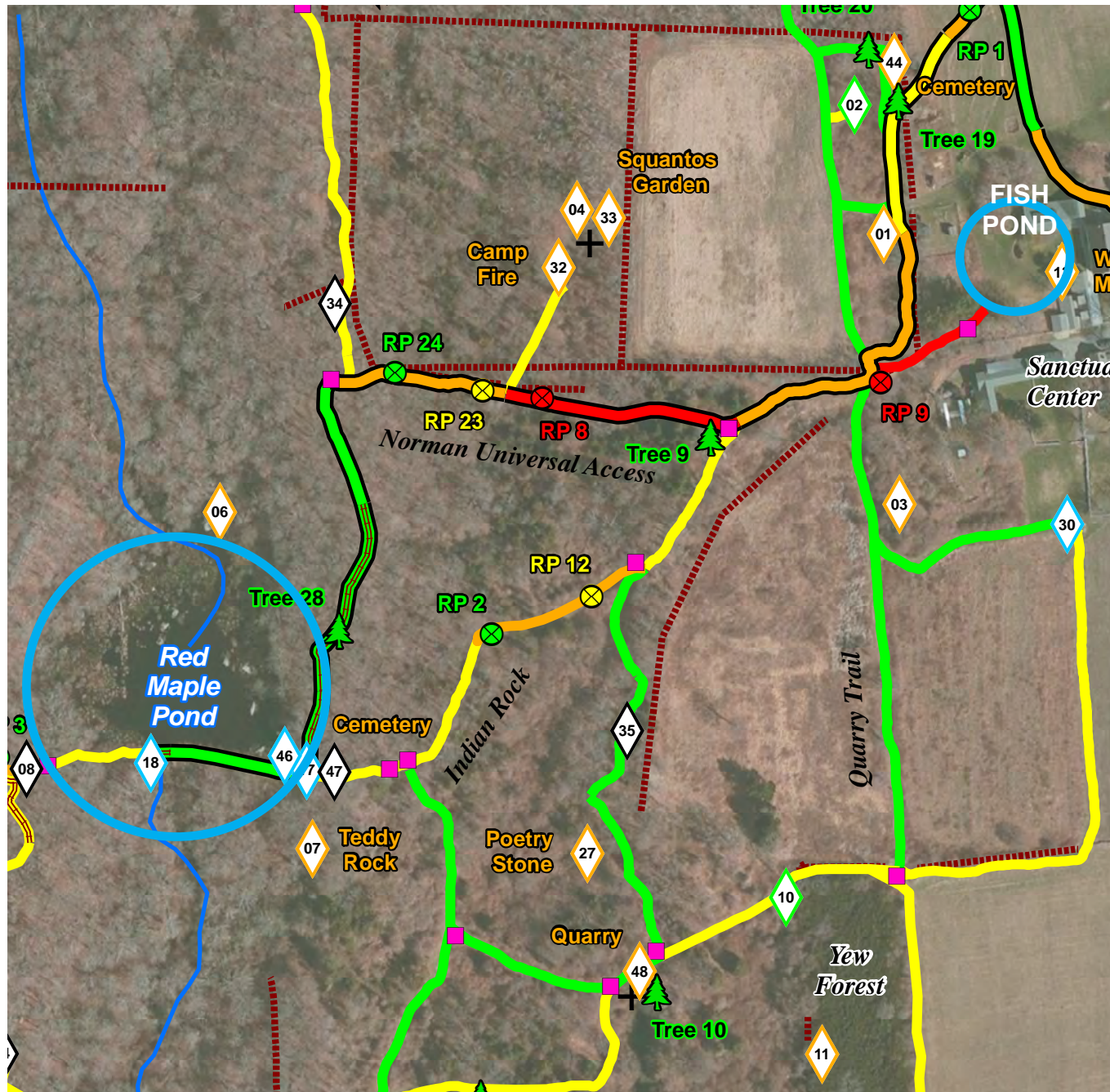
Overall Recommendations

Viewsheds should be maintained.

The main views and vistas from the NBS campus focus on the layout of the historic farm with its original 18th century buildings, the north and south agricultural fields and views to Gardiner's Pond, Second Beach and the Atlantic Ocean beyond.

Views should be opened up at the Welcome Center entrance making it a clear destination for visitor sign-in.

Limiting visibility at the northwest corner of the parking lot will deter cut-throughs.



map source: Horsley Whitten

DAM & RED MAPLE POND

Paradise Farm is no stranger to man-made ponds. Colonial farms frequently diverted water from streams for livestock. They accomplished this through strategic damming of streams with earthwork and stone walls. George Norman purchased Paradise farm in 1878 and set about engineering the creation of Gardiner's and Nelson Ponds by building a dam on Paradise Creek. This significantly altered Paradise Valley but supported his enterprise; the Newport Waterworks. The City of Newport purchased the waterworks in 1931.

Red Maple Pond may have been a pond for livestock in the colonial era. It was dammed in the 1960's and the dam was replaced in the 1980's, twenty years later. Periodic dredging is required. Today the pond supports wildlife especially egrets, herons and painted turtles. The pond has a pedestrian bridge (over the dam) and an over-look for viewing wildlife.

FISH POND

The fish pond is located in the West Yard outside the administration offices and is a popular attraction for visitors, especially small children.

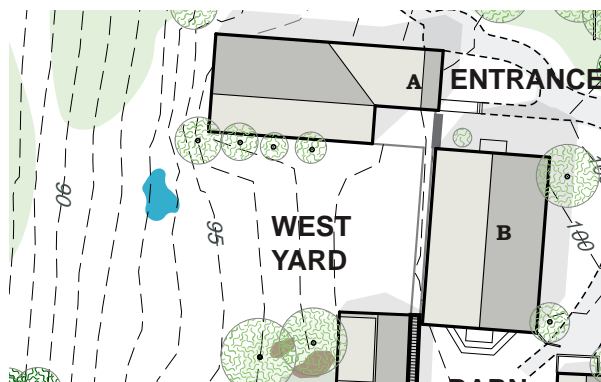
Overall Recommendations

No additional man-made water pond features should be constructed on the NBS campus as they would not be considered historic.

The Dam at Red Maple Pond is outside the campus and is regulated by RIDEM.

The Water tower and pump could be considered cultural water features and therefore could be restored.

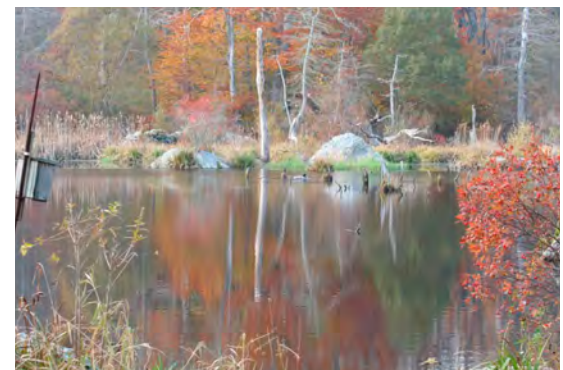
Green infrastructure projects could be considered especially at the Welcome Center entrance where stormwater run-off from the parking area is a problem.



Plan west yard - copyright Place studio



Fish pond 2014



Red Maple Pond- NBS Website



George Cerio with his chickens- Photo NBS Archives

SMALL SCALE FEATURES

The Norman Bird Sanctuary's many amenities, accumulated over the years, contribute a great deal to the campus' sense of character, history as a working landscape. Some of these items are useful, and some are cultural. The intension of this inventory is to provide the necessary information to determine which amenities are missing, unnecessary, require repair, or replacement.

Like most campus' that have developed over time, Norman Bird Sanctuary contains a random collection of amenities (see plan on following pages). Fortunately, the Norman Bird Sanctuary's campus is replete with various objects that contribute to the character and feel of the site. By selectively rearranging, replacing, repairing, and removing

some of the amenities on-site, the Norman Bird Sanctuary could greatly unify its campus amenities and begin to reveal the site's human processes as a working landscape, its ecological processes, and also aspects of the site's multi- layered history. Further, necessary functional amenities, such as trash receptacles, bike racks, and seating can be introduced in a way that contributes to the site's overall identity.

A comprehensive plan for the Norman Bird Sanctuary's campus amenities will ensure that the decorative and functional elements placed on the site contribute to the campus' cultural identity.



Overall Recommendations

Amenities related to the daily operations of the NBS should be located where needed.

Trash and recycling receptacles should be placed at the trail head/Welcome Center entrance and parking lot.

A new bike rack is needed at the parking lot.

Seating may be provided at key locations throughout campus; the Welcome Center, Mabel's Garden, the fish pond, the demonstration garden.

Mabel's garden needs at least one more bench to match the existing benches or colorful loose tables and chairs may be substituted.

ARTIFACTS

Agricultural artifacts should be placed in strategic locations for education purposes and labeled.

The water tower could be restored and used for irrigation and signage.

MEMORIAL CONTRIBUTIONS

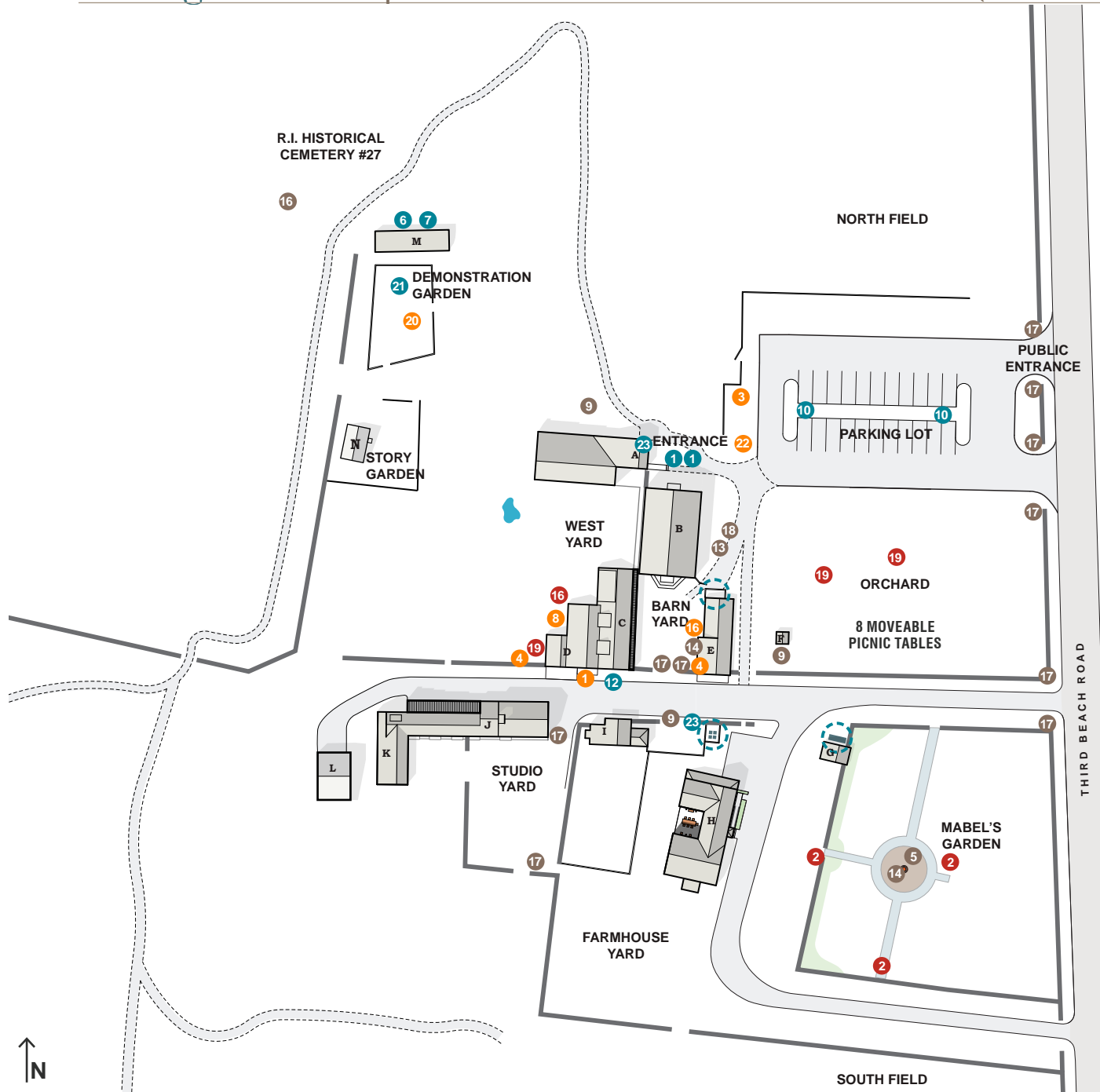
Any new bench and tree donations should be accepted and approved by the program director.

The Welcome Center entrance requires at least 4 benches.

Mabel's Garden could accommodate as many as 4-5 new benches.

The west yard could accommodate 1 long fixed bench along the walkway (custom) and possibly 1 bench at the fish pond.

Existing Conditions | SMALL-SCALE FEATURES (AMENITIES & ARTIFACTS)



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
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- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

AMENITIES LEGEND

- UTILITIES
- HISTORICAL MARKERS
- SEATING
- MISC.
- SCREENED UTILITIES



1 BARRELS (TRASH)



2 BENCHES



3 BIKE RACK



4 BIRD HOUSES



5 URN IN MABEL'S GARDEN



6 COMPOSTING



7 COMPOSTER



8 SUNDIAL



9 OLD WHEEL BARROW



10 LIGHT POST



11 PICNIC TABLES



12 WELL HEAD



13 WATER PUMP



14 STEEL RING



15 SCREENED UTILITIES



16 DEDICATION BENCH



17 VERTICAL ENTRY STONES



18 WATER TOWER



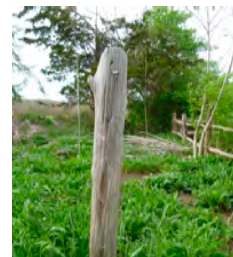
19 FIXED BENCHES



20 BIRDBATH



21 GARDEN STRUCTURE



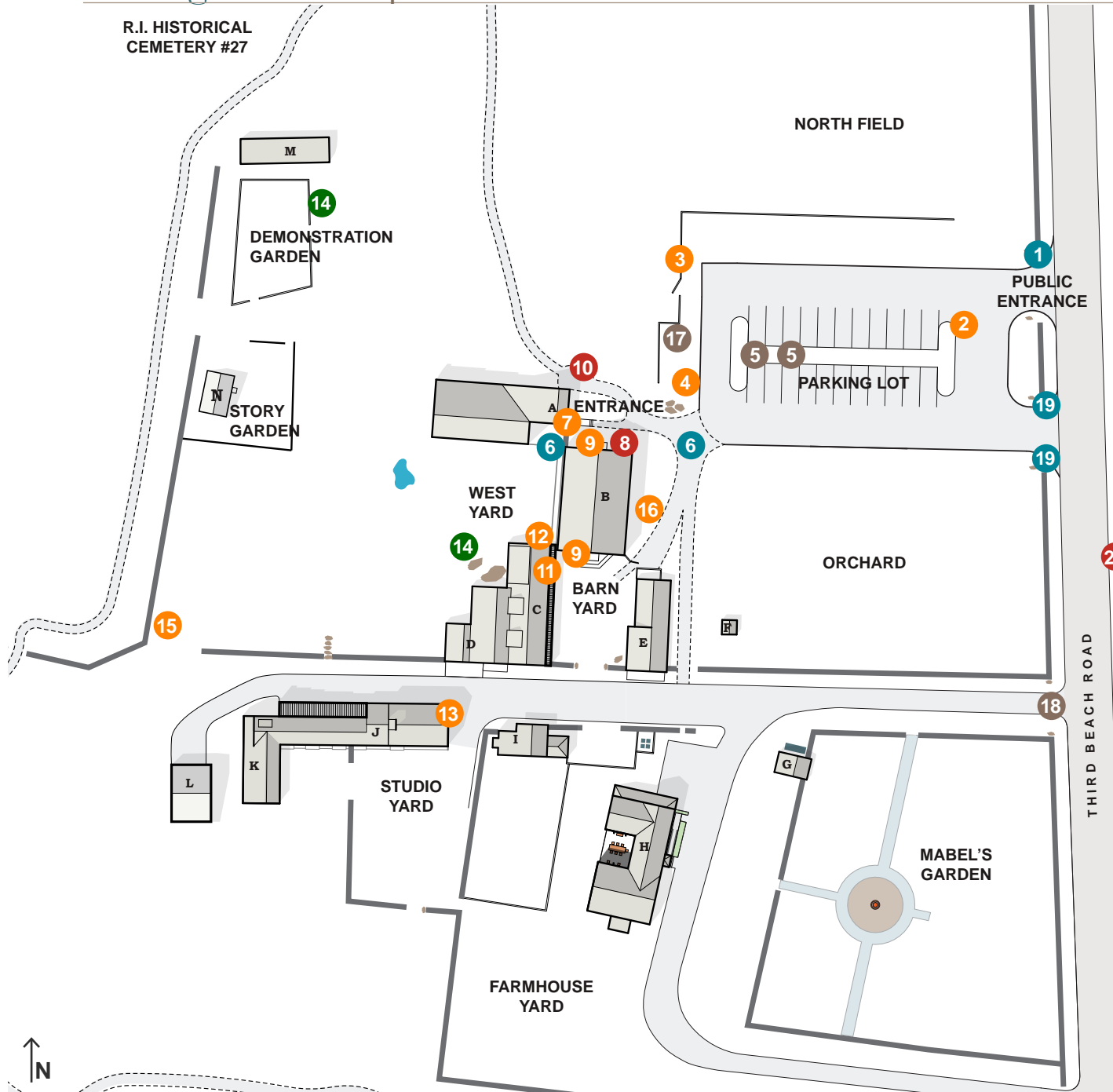
22 WOOD POST



23 TRASH CAN

Existing Conditions | SIGNAGE

R.I. HISTORICAL
CEMETERY #27



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
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EXISTING SIGNAGE LEGEND

- STANDARDIZED
- HAND-MADE WOOD
- NBS CUSTOM WOOD
- EDUCATIONAL
- MISC. SIGNAGE





1 PARKING AREA ENTRANCE



2 PARKING LOT SPEED LIMIT (MOVABLE)



3 CHECK-IN DIRECTIONAL SIGN



4 MORE PARKING



5 HANDICAPPED PARKING



6 VISITOR INFO SANDWICH BOARD (MOVABLE)



7 WELCOME CENTER



8 BARN HISTORICAL MARKER



9 BARN/MUSEUM



10 NBS HISTORY AND TRAIL SIGNAGE



11 RESTROOM



12 ED SHED



13 STUDIO/CLASSROOM



14 POLLINATOR HABITAT



15 WOODEN TRAIL SIGNAGE



16 DO NOT DRINK REMINDER AT WELL PUMP



17 NO PARKING



18 NO PARKING SANDWICH BOARD (MOVABLE)



19 PARKING AREA EXIT



20 NBS PROPERTY

Signage plays an integral part in the way visitors understand the Norman Bird Sanctuary, and interact with it.

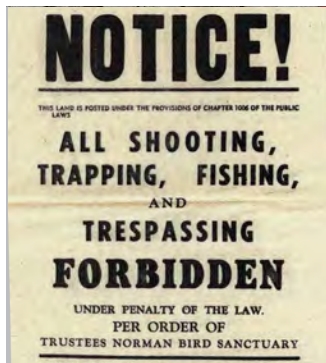
EXISTING CAMPUS SIGNAGE

A variety of signage types from hand-made wood to generic standardized metal street-type signs represent existing campus signage. Painted wood signs direct vehicular circulation from the road into the parking lot and entrance of the Bird Sanctuary. A hand painted sign reminds visitors to sign in at the visitor center. Additional standardized signage denotes handicapped parking and employee only areas. A hand painted sign above the Welcome Center and a movable information sandwich-board-type sign direct visitors to the Welcome Center and main entrance. Next to the Welcome Center at the primary trail head, three large informational signs illustrate the natural and cultural histories of the site and the trails map. Older, more rustic wooden signs for wayfinding include a large trail map at the wooded entrance to the trail system. Buildings are identified with hand-painted, wood signs with a summer camp look and feel. Contemporary “Pollinator

Habitat” signs are located throughout the campus and identify areas with native plantings that attract pollinator species of insects and birds.

Each of these signs addresses a specific need of the campus with varying levels of effectiveness. There is not a graphic consistency or hierarchy of signage on the campus. Visitors looking for wayfinding instructions throughout the site may find the current signage conditions unclear and confusing to navigate.

Some of the signage in the parking area is not clearly visible to visitors. This, combined with the inconsistent visual language makes the Norman Bird Sanctuary’s desired circulation path to the visitor center check-in unclear for first-time visitors to the campus.



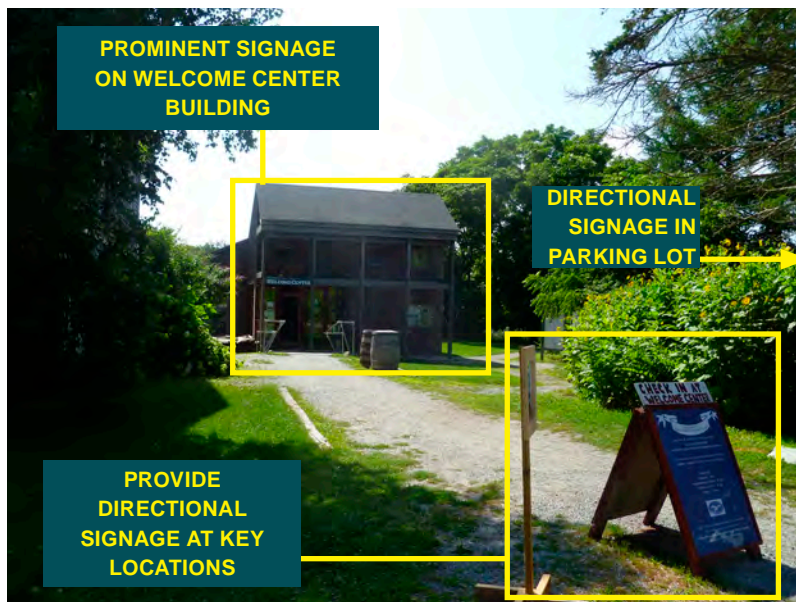
Historic signage photos and images from the NBS archives.

LONG-TERM CAMPUS SIGNAGE PLAN

Negotiating a balance between consistent, relevant graphics and overall legibility for those who are not completely familiar with the Norman Bird Sanctuary is an important aspect for consideration in a long term campus signage plan. Part of this plan should include opportunities to amplify the experience and legibility of key campus areas. This is most important at the campus entrance and parking lot. Signage directing visitors from the parking lot to the entrance of the Welcome Center can be seamlessly integrated into the broader design of the Norman Bird Sanctuary's main entrance. While too much signage in this area would likely detract from the charm of the Norman Bird Sanctuary, minimal, well placed, and legible signage would bolster the identity of the Norman Bird Sanctuary in this key area.

Ecological and cultural informational signage throughout the site should also be included in a long-term campus signage plan. This type of signage will help to welcome visitors to areas which now seem off-limits such as the Farmhouse and Mabel's Garden. Informational signage explaining working and educational aspects of the Bird Sanctuary such as composting and gardening, can become outreach opportunities by including information on how these ideas and practices can be adopted by visitors and implemented outside of NBS. Similarly, explaining the relationship between birds and their habitats is an educational opportunity for gardeners and bird-watchers alike. Broadening the NBS' visitor experience by providing current ideas in environmental education and knowledge based experience suits Mabel Norman's vision and will help sustain the NBS into the future. A comprehensive signage plan will go a long way to accomplishing this goal.

"No trespassing" signs should be posted where trespassers usually enter at the parking lot and at the gate and farmhouse entrance and any other location deemed necessary.



Overall Recommendations

Design and implement a comprehensive wayfinding signage system for the NBS campus that does not visually impede historic or iconic views.

Design and implement building identification signage.

Design and implement historical and educational signage throughout the NBS property including the campus.

PRIORITIES

Welcome Center and Entrance signage

Connection from Parking Lot, Entrance to Farmhouse

Additional restroom wayfinding signs

INTERIM SOLUTIONS

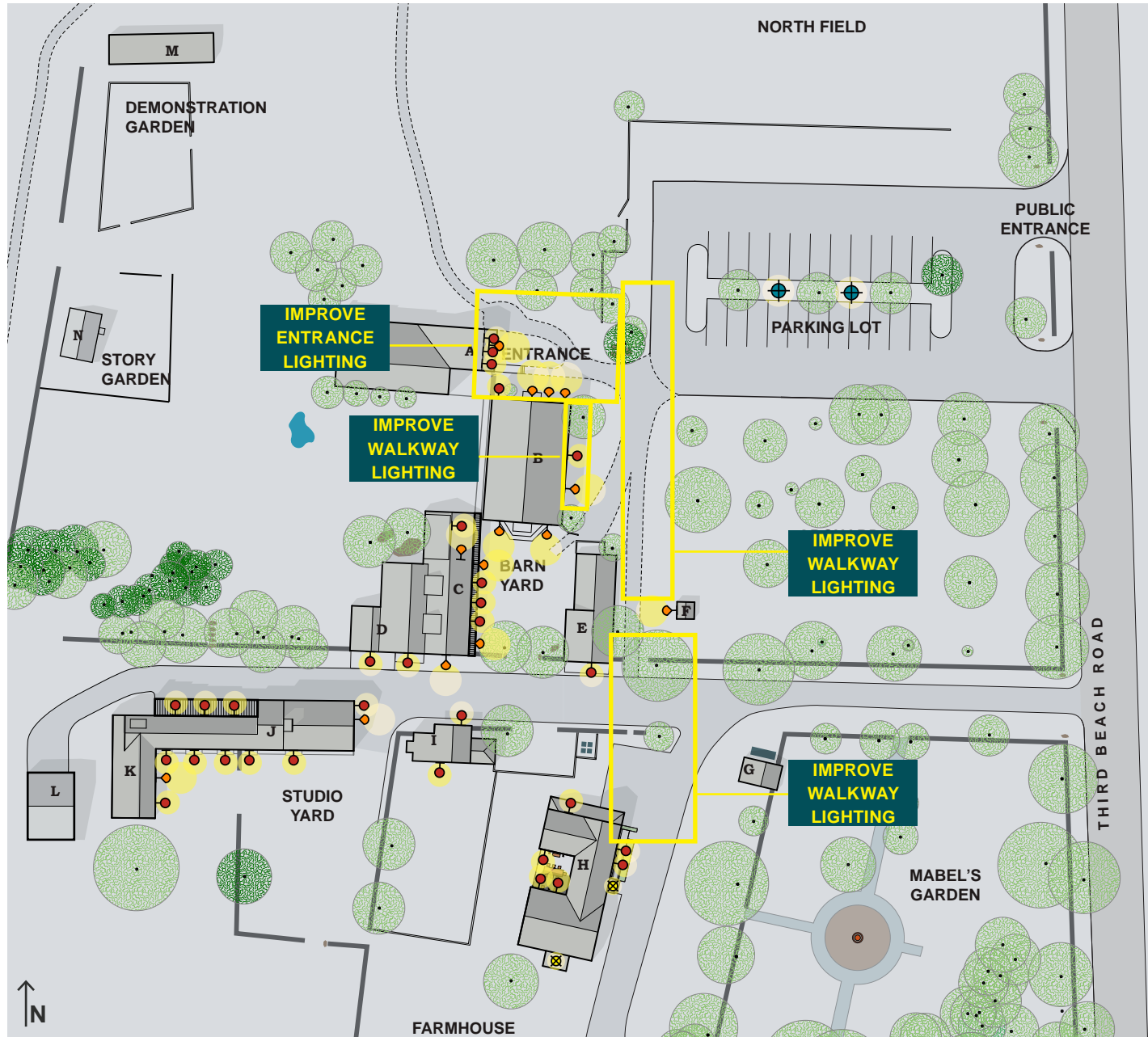
Add complementary signage to campus where needed. (see diagram on p.56)

PRINCIPLES & GUIDELINES

Wayfinding signage must highlight circulation, distance and trail linkages, label buildings and building functions and contribute to the site's overall character.

Additional signage must provide information on the cultural and natural histories of the site as well current programming and rules of conduct.

Permanent signage and signage for special events should visually compliment each other.



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
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- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

LIGHTING LEGEND

- FLOOD LIGHT
- SCONCE
- BOLLARD
- PENDANT



LIGHTING

The lighting on the Norman Bird Sanctuary campus consists mainly of sconces and flood lights attached to the buildings. Additional fixtures include, two pendant fixtures at the Paradise Farmhouse entrances and two bollards in the visitor parking lot which each house two bulbs. Because existing lighting is concentrated on building structures,

some key walkway connections between campus buildings and visitor parking areas may be insufficiently lighted. The lighting of additional outdoor spaces is not recommended, however, Mabel's Garden might be an exception. It might be desirable to light the entrance and circle in Mabel's Garden for special events.

Overall Recommendations

Evening events at the Studio and the newly renovated Farmhouse would benefit from additional low-level lighting or bollards along the path from the parking lot to the farmhouse.

Additional lighting at the parking lot entrance and exit might be desirable

Solar and LED technology options should be considered for all future lighting additions and replacement fixtures.

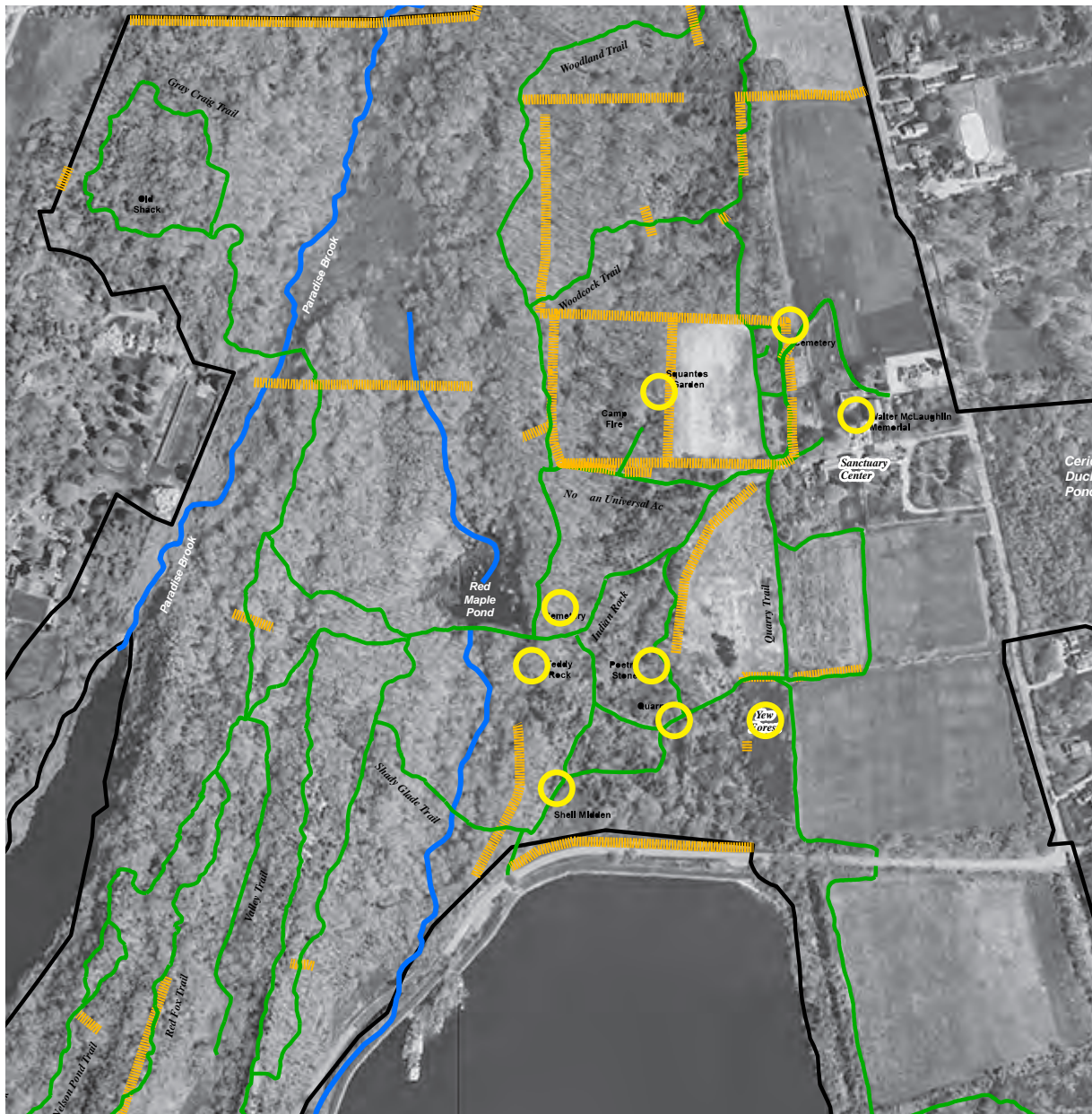
All future lighting plans must take into consideration the safety of visitors, staff and the longevity and maintenance of the fixtures.

Welcome Center entrance must be well lit.





DARK SKIES

The dark-sky movement is a campaign to reduce light pollution. The advantages of reducing light pollution include an increased number of stars visible at night, reducing the effects of unnatural lighting on the environment, and cutting down on energy usage. *Wikipedia* All future lighting plans for the NBS campus must take into consideration "dark- sky" planning guidelines, policies and initiatives.

Existing Conditions | STONE WALLS & FENCES



LEGEND

-  Streams (RIGIS)
-  Norman Universal Access Trail
-  Stone Wall
-  Norman Bird Sanctuary Property Boundary (RIGIS)



'Paradise Valley' Middletown, RI

(Horsley Whitten site mapping; RIGIS maps base aerial 2014)



WALLS

The roughly three miles of stone walls on the campus were likely used to fence in animals, and to delineate property boundaries.

The average dimensions of the walls on the NBS campus are 30" high by 20" wide.

The stone walls on the NBS campus, between the north and south agricultural fields, seem to generally be in better repair and appearance than other walls on the property. This makes sense since they are closer to the campus and therefore within constant view of Paradise Farmhouse.



NRHP STATUS

The stone walls at the Norman Bird Sanctuary are considered a 'contributing' structure according to the NRHP Report of 2012. The report states "a network of fieldstone walls defines the vicinity of the farmhouse, the orchard, the family garden (Mabel's Garden) sheep pen, agricultural fields, and part of the property bounds along Third Beach and Hanging Rock Roads. The network of walls extends throughout the NBS property, probably marking former property lines, field boundaries, and animal pens long overtaken by woodlands. Typically measuring about 30" high and 20" in depth, these walls run for a cumulative length of approximately three miles."

FENCES & GATES

There are approximately five types of wood fencing on the NBS campus; split rail fencing at parking lot, stockade and picket fencing between the Barn and Garage, and diagonal lattice fencing screening the Farmhouse mechanicals. The Caretakers Cottage has additional picket fencing at the parking and yard. Galvanized metal farm gates are located at field entrances and decorative wooden gates are located at Mabel's Garden.

Recommendations

STONE WALLS

Stone walls should be properly maintained especially at perimeter gates along Third Beach Rd. to prevent trespassing.

Any new tree planting should be kept at a distance of at least 10 feet from stone walls.

FENCES & GATES

Fences should be properly maintained.

A consistent fence type should be determined for all internal campus fences.

A consistent fence type should be determined for the north and south agricultural fields.

"Farm" gates along Third Beach Road and adjacent to the north and south agricultural fields should be consistent in design.

The new gates at Mabel's Garden should be used as a model for all future internal campus gates.





Off-Campus Archaeological Sites

HANGING ROCK

(NRHP- 19th century, contributing)

Hanging Rock or “Berkley’s Seat”, sits approximately 10’ above sea level, and is composed of Coal-Age conglomerate and sandstone. It is noted for its iconic south facing profile jutting out over Paradise valley with a view to second beach and the Atlantic Ocean. Hanging Rock’s iconic image has been captured by many known and unknown artists through the ages but its heyday was in the late 1800’s when “luminist” artists such as John LaFarge, John F. Kensett, James A. Suydam, Thomas Worthington Whittredge painted extensively in Paradise Valley.

QUARRY

(NRHP- 19th century, contributing)

This defunct slate quarry made slate roof tiles for Newport buildings. The quarry is currently a 20’ by 100’ pond located along the Quarry Trail about 600’ from the farmhouse. There is a fixed rustic bench on the side of the trail for viewing.

THE GARDINER FAMILY GRAVEYARD aka Middletown Historical Cemetery No. 27

(ca 1786- ca 1872, NRHP contributing)

Located northwest of the hoop house, on the other side of the wall is the Gardiner Family burial plot. Measuring approximately 15’ by 20’ the cemetery is set against two stone walls with iron railings set into vertical stone slabs. There are thirteen family members interred there. This graveyard is currently accessible to the public.

GRAVE SITE

(NRHP date unknown, contributing)

Approximately 1000’ southwest of the farmhouse and southeast of the Red Maple Pond impoundment is a small grave site with four unmarked slate slab markers. Archaeological investigations, related to the creation of the pond in the 1990’s, revealed the graves. This area is not accessible to the public and there are no plans to highlight it as a feature of the property.

POETRY ROCK

The stone was found on site, erected by John Hegnauer, carved by Fudd Benson and the poem was written by Frank Muhly. It was originally made for a group art show at the Cooper French Gallery in 1974 along with another stone which is currently located at the barn. According to Fudd Benson, the location of the stone, at the time of its placement, takes advantage of the “raking light” which highlights the carved letters.

COMMEMORATIVE ROCK

The rock and plaque commemorating Edward Clark Sturtevant a well known and respected ornithologist, naturalist and author is located just east of the pond.

TEDDY ROCK

Known to campers as “Teddy Rock”, this puddingstone outcropping is a popular destination for campers, hikers and naturalists. Campers can learn about geology here as well as try their hand at building stick structures.

SQUANTO’S GARDEN

Once an open sunny area, the tree canopy has

Recommendations

HISTORICAL CEMETERY

Continued maintenance and clearing are recommended to protect the gravestones.

Informational signage would enhance this historic site.

grown in over Squanto’s Garden. It was originally used to introduce students to Native American gardening practices. The open area near Squanto’s Garden is used for camping and story telling circles.

YEW FOREST

The Yew Forest is a relic from a period of time when part of the property was leased to plant nurseries. While yew is not a native species, the dense evergreens provide year-round shelter for birds and mammals. Students will find their way under the yews and are released out to the South Agricultural Field.

SHEEP PEN

An artifact from a time when livestock was part of farming practiced on the site. The Sheep Pen is significantly overgrown to a degree that it is hard to discern from its surroundings and it is not included as a location of interest on the NBS trail guide, however, it is considered a contributing site by NRHP.

SHELL MIDDEN

This archaeological site contains prehistoric shells and other evidence of early human activity in the Paradise Valley area.



'Paradise Valley' Middletown, RI

Bibliography ref. for aerial map: RIGIS, 1998. 1997 Digital Orthophotographs. Rhode Island Geographic Information System (RIGIS) Data Distribution System, URL: <http://www.edc.uri.edu/rigis>, Environmental Data Center, University of Rhode Island, Kingston, Rhode Island (last date accessed: 17 December 2010).

NBS BEACH

Formerly Peabody's Beach, The Norman Bird Sanctuary Beach was acquired in 2003. This 24 acre site, 3/4 of a mile south-east of the NBS main campus, extends the NBS property south to the nearby coast. Educational explorations are expanded to include Third Beach, freshwater and saltwater marshes, dunes and a tidal stream.

The unique geography of Paradise Farm on the hill above NBS Beach, which is situated along the mouth of the Sachuest River, is an example of coastal watershed hydrology and the relationship between land and sea.

In 2009 the Third Beach Education Center was established in the refurbished former Peabody's Beach Club. NBS educators developed, "Coastal Camps" for children ages kindergarten through nine years old (or "various age groups"). Campers explore tide pools, catch fish and conduct experiments at the Education Center.



Recommendations

NBS BEACH

Signage, lighting and amenities consistent with the Main Campus are recommended.

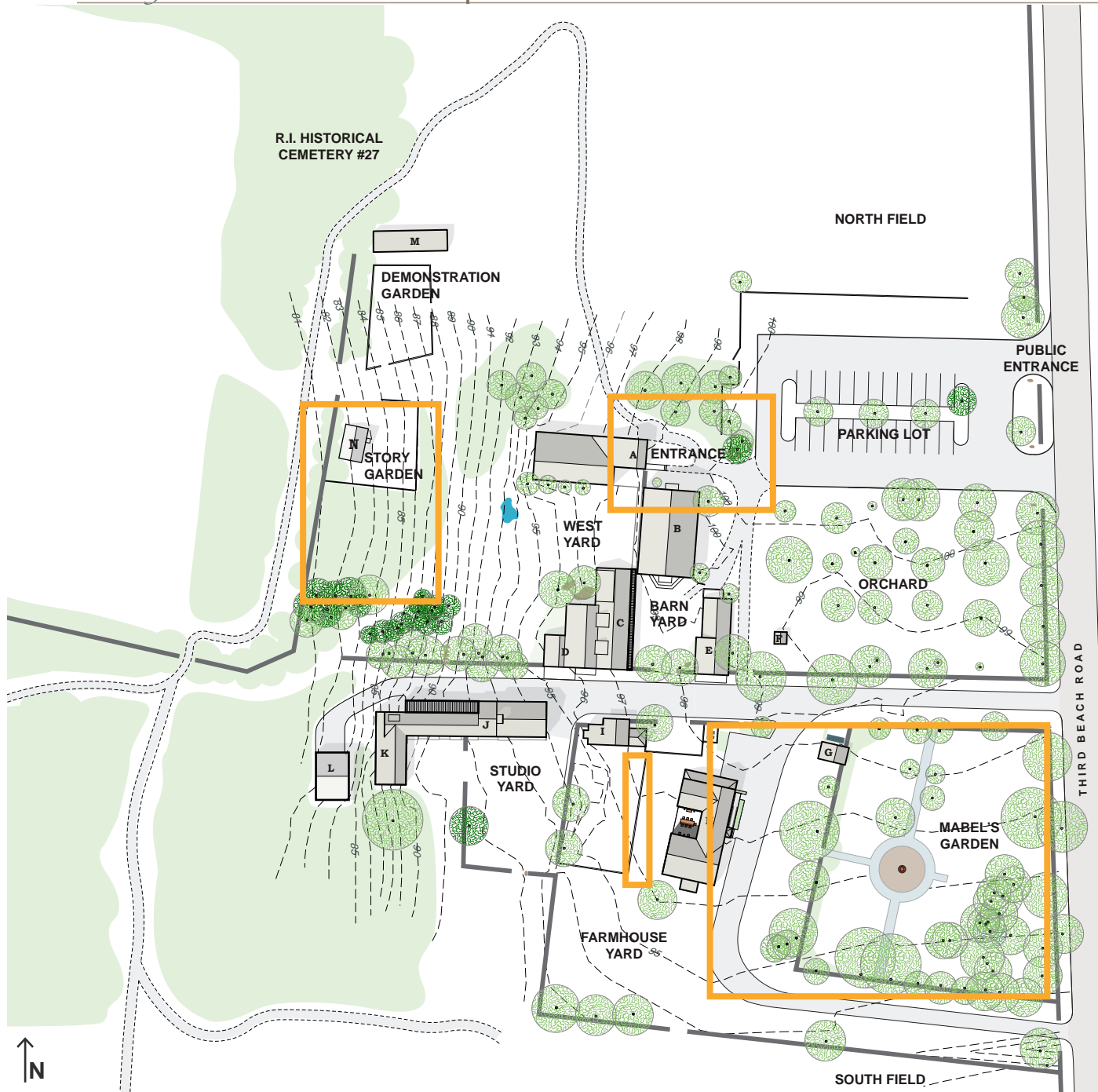
Planting should be native and limited to shrubs and perennials. Where possible, native grasses should be established to protect the site from erosive forces of wind and storm surge.

Fund-raising clambakes could be considered in this location.



Third Beach Education Center (Google image capture 2012. ©2014)

Analysis and Evaluation | CAMPUS PRIORITY AREAS



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

PRIORITY AREAS

Analysis & Evaluation

Through analysis and evaluation of the existing conditions, history and discussions with the Executive Director and staff, it became clear that particular areas were of primary importance. In this section we suggest recommendations for all aspects of the campus but Mabel's Garden, the main entrance at the Welcome Center and signage are singled out as priorities.

The Norman Bird Sanctuary (NBS) provides campus amenities for its visitors and for the daily functioning of all its educational and event programming. For the most part the NBS presents a good experience to the public. It has comprehensive educational and event programming. Overall improvements to signage, lighting, site furnishings and accessibility are a high priority. Circulation, topography, paving, as well as lighting and signage, require coordination to maximize ease of access for all visitors with mobility and sight impairments. Improved strategic signage, planting and wall repair will also help direct visitors from what are now several trail access points to one trailhead at the Welcome Center.

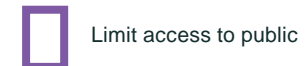
Tree management on the campus is of the utmost importance not only from a historical perspective, such as the Orchard and some trees in Mabel's Garden, but for the overall health of all the trees. Potential damage to structures and the safety of visitors and staff are important considerations as well. A campus-wide strategy for tree planting and replacement has been proposed that over time replaces invasive tree species with native species and limits shrub and perennial planting to the Main Entrance, the Farmhouse Entrance, Mabel's Garden and the Demonstration Garden.

Programming recommendations will enhance what is currently a full roster of educational programs and events.



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
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Limit access to public



ADA accessibility required

Circulation, Accessibility & Paving

CAMPUS CONNECTIONS

- The campus buildings and outdoor spaces must be ADA compliant at minimum.
- Off-Campus sites will continue to have limited accessibility.
- Maintain the historic character of the campus as much as possible.
- View corridors must be maintained.
- A comprehensive signage plan will direct visitors.

WALKWAYS & PAVING

- Use consistent permeable materials for paving throughout the NBS campus. This material must be accessible and may differ from the trail material.
- The Welcome Center entrance must be fully accessible.
- Mabel's Garden should be accessible from the Farmhouse and driveway at the two gates.
- The Barn requires fully accessible ramps at both the north and south entrances.

TRAIL ENTRANCES & SECURITY

- Porosity at the perimeter of the NBS property should be monitored
- Driveway entrances along Third Beach Road should be chained and locked.
- Planting at northwest corner of parking lot at fence will deter visitors from cutting through to trails.
- New design for visitor entrance will direct visitors to sign-in at Welcome Center and trail head.
- A comprehensive signage plan will direct visitors.
- Consideration should be given to limit access at the southwest corner of the west yard and the interior road which connect to the trails.
- Weekend volunteers can help get people to sign in and direct them to where they need to go.



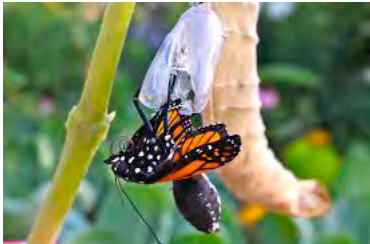
Farmhouse



Barn and Welcome Center Entrance



Entrance Aviary



Monarch Butterfly Farm



Site specific sculpture
Cornelia Konrads, Germany

Programming & Events

PUBLIC PROGRAMS, EDUCATION & CAMPS

- Promote “up-close” public interaction with birds, butterflies and small mammals and reptiles. For instance, a small aviary at the entrance near the barn would allow visitors to greet the two hawks or the owl when they come in on weekends. The Barn Museum could become a “nature lab” where people can study and sketch pieces of the nature collection. The Welcome Center entrance can also display Paradise Valley’s unique geology and plant ecologies to inform visitors and groups of what they will encounter on their visit to NBS.
- Additional programs could be specific to endangered or threatened species such as Monarch butterflies. A butterfly farm in the west campus area would be ideal.
- There is currently no place on the island to take injured wild animals. The NBS might consider providing guidance to the public as to where they can find assistance or who to call.
- Additional opportunities for native plant species education will be available at Mabel’s garden and the Welcome Center entrance.

EVENTS & EXHIBITIONS

- Additional events might include art shows which display artists work, landscape and nature artists or sculpture and site specific art.
- Collaboration and exchange of archaeological and nature exhibits might be promoted between the Centro Caprense Ignazio Cerio in Capri and the NBS.
- Engage students from Colleges and Universities especially those that related programs in plant sciences, ecology, historic preservation, etc.

SITE RENTALS

- Site rentals should be limited to the NBS main campus however NBS Beach could be considered for private clambake rentals (in addition to 'Bake on the Beach') as there are few rentals of this kind on the island.
- With the renovation of Paradise Farmhouse, the NBS campus has a manageable range of offerings for group rentals and plenty of space for different events.

Topography & Hydrology

TOPOGRAPHY

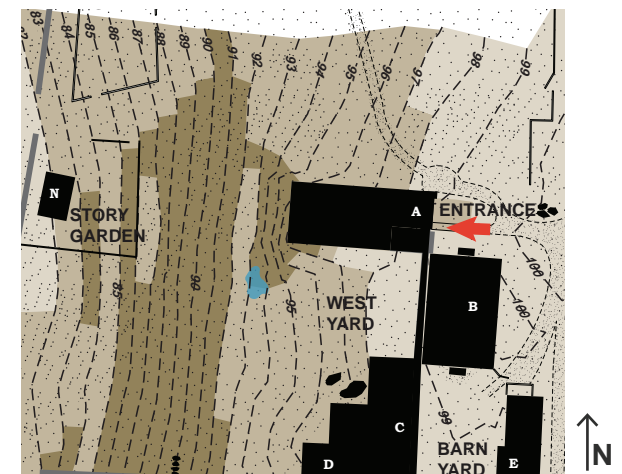
- The areas of greatest challenge regarding slope is the main entrance at the Welcome Center and the West Yard which includes the Hoop House, Demonstration Garden and Story Telling Yard. Access from the Welcome Center into this area would require additional study and design if this area were to be programmed for use.
- In 2015 a Universal Trail will be installed and the Welcome Center Entrance and Barn will be made ADA accessible.

HYDROLOGY

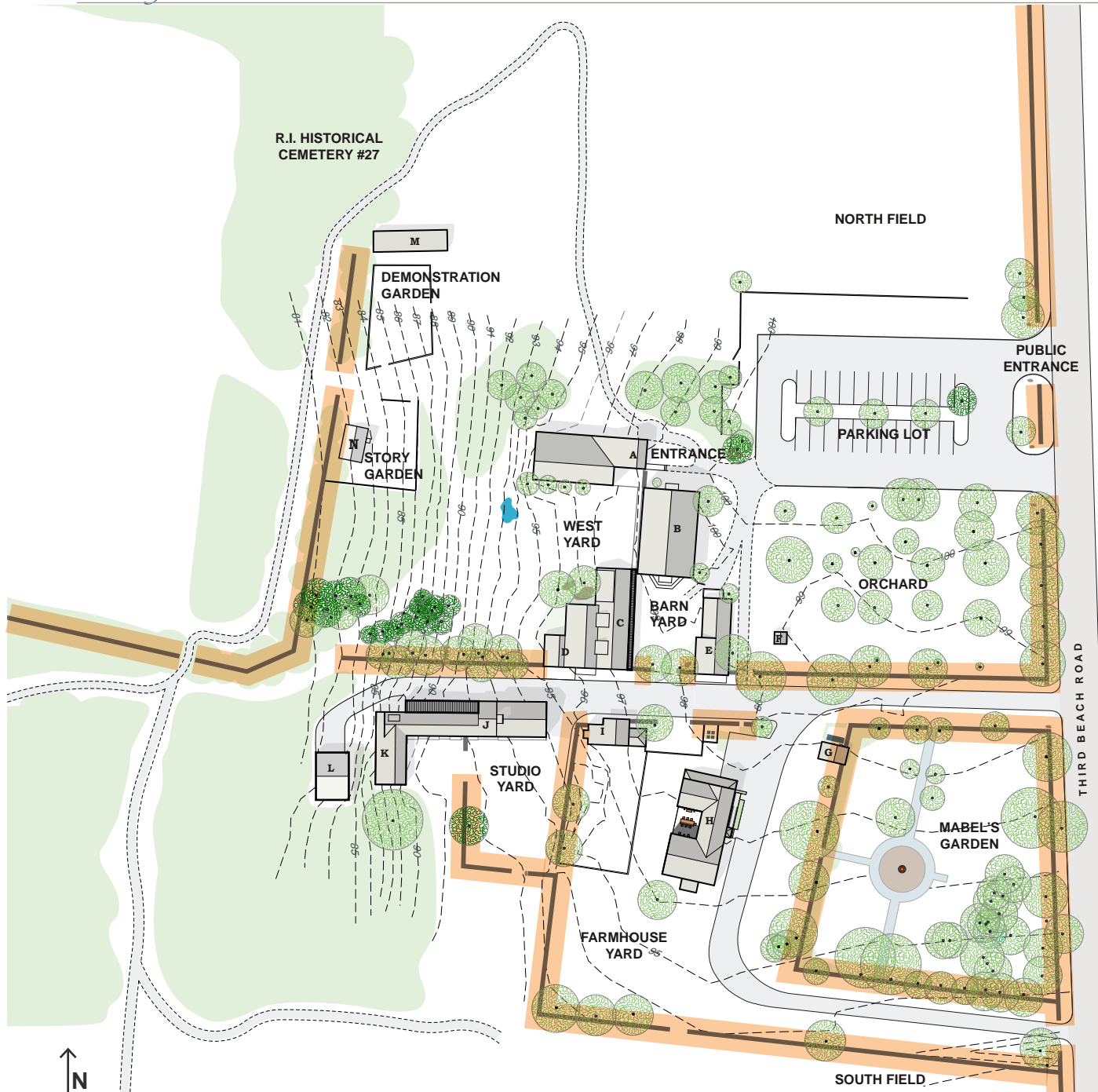
- Slope grade away from all buildings and keep water clear of all building entrances and walkways.
- Install a rain garden to mitigate stormwater run-off from the parking lot at the Welcome Center.



NBS Beach



Area of steepest slope



BUILDING LEGEND

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PLANT TREES 10 FEET
AWAY FROM STONE WALLS



Vegetation (Trees & Invasives) Orchard & Gardens

OVERALL CAMPUS PLANTING STRATEGIES

- Any replacement of trees along stone walls should be no less than 10 feet away from the historic stone walls.
- Other than Mabel's Garden, there should be no shrub or perennial planting beds along the historic stone walls.
- All plantings in Mabel's Garden, in front of the Farmhouse at the Welcome Center entrance or any future location should be native and beneficial to birds and wildlife.
- Iconic Campus views and views to Second Beach and Paradise Valley should be maintained.
- Invasive species should be monitored and removed periodically.
- Newly planted trees should be included in the Memorial Tree Program but the species and location shall be determined by the program director.

CAMPUS TREES

- Annual assessment of trees and pruning for deadwood, visitor safety and building safety.
- As Sycamore maple and Norway maple trees decline they should be replaced with native non-invasive species. Sugar maples would be a good substitute especially along Third Beach Road at Mabel's Garden and the interior campus road.
- Historic trees or iconic trees may be replaced in-kind.

ORCHARD

- Annual assessment of fruit trees and pruning of deadwood and epicormick growth as necessary.
- Replacement of trees in the Orchard should maintain a grid layout.
- In the future, only apple trees, *Malus* sp. should be planted in the Orchard.
- As the trees along the wall at Third Beach Road decline they should not be replaced in order that the Orchard reads as such clearly. Consideration may be given to this same strategy at the Agricultural fields.

MABEL'S GARDEN

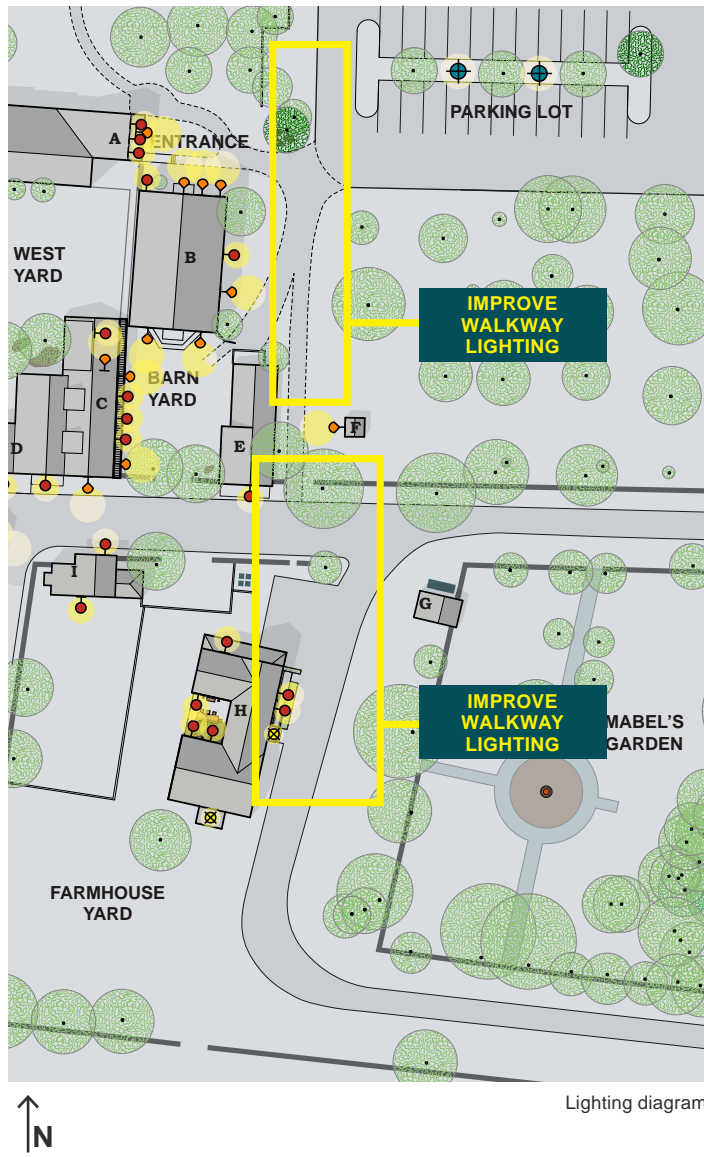
- Annual assessment of trees and pruning for deadwood, and visitor safety especially the twin iron-woods at the south wall where couples get married.
- At least three additional fruit trees may be relocated along the north south access according to the 1939 plan. Maintain an appropriate area for wedding seating. Existing fruit trees may be replaced.
- The north, west and south perimeter will be planted as a native perennial garden. The beds will be approximately 6 feet wide.
- The east side of the garden will be planted with an understory plant ecology of native shrubs and trees.
- Plant material should be chosen for their benefits to specific birds for either food, habitat, nesting material or all three.



Grid layout at orchard



Aesculus hippocastanum



Lighting Recommendations

- Evening events at the Studio and newly renovated Farmhouse would benefit from the addition of low-level lighting or bollards along the path between the parking lot and farmhouse.
- Additional lighting at the parking lot entrance and exit might be desirable.
- Solar and LED technology options should be considered for all campus lighting.
- Future lighting plans must take into consideration the safety of visitors, staff and the longevity and maintenance of the fixtures.
- Future lighting plans must take into consideration “dark-sky” planning guidelines policies and initiatives.

Buildings & Structures

- The NBS would benefit from a small aviary at the entrance near the barn so visitors can greet the two hawks or the owl when they come in on weekends.
- The garage/ shed across from the Ed Shed might find better use as a small cafe/ gift shop with access from the parking lot. This building may have additional uses for NBS camp or education staff.

Views & Vistas

- Viewsheds should be maintained.
- The main views and vistas from the NBS campus focus on the layout of the historic farm with its original 18th century buildings, the north and south agricultural fields and views to Gardiner's Pond, Second Beach and the Atlantic Ocean beyond.

Constructed Water Features

- No additional man-made water pond features should be constructed on the NBS campus as they would not be considered historic. However, a raingarden at the Welcome center entrance will help to mitigate stormwater run-off from the parking lot.
- The Dam at Red Maple Pond is outside the campus area and is regulated by RIDEM.
- The Water tower and pump could be considered cultural water features and therefore could be restored.

Small Scale Features

AMENITIES

- Amenities related to the daily operations of the NBS should be located where needed.
- Trash and recycling receptacles should be placed at the trail head/ Welcome Center entrance and parking lot.
- A new bike rack is needed at the parking lot.
- Seating may be provided at key locations throughout campus; the Welcome Center, Mabel's Garden, the fish pond, the demonstration garden.
- Mabel's garden needs at least one more teak bench to match the existing benches and/or colorful loose tables and chairs may be substituted.

ARTIFACTS

- Agricultural artifacts should be placed in strategic locations for education purposes and labeled.
- The water tower could be restored and used for irrigation and signage.

MEMORIAL CONTRIBUTIONS

- Any new bench and tree donations should be accepted and approved by the program director.
- The Welcome Center entrance requires 2-4 benches.
- Mabel's Garden could accommodate as many as 6 new benches total.
- The west yard could accommodate 1 long fixed bench along the walkway (custom) and possibly 1 bench at the fish pond.



Bike rack



wheel barrow



Dedicated tree bench

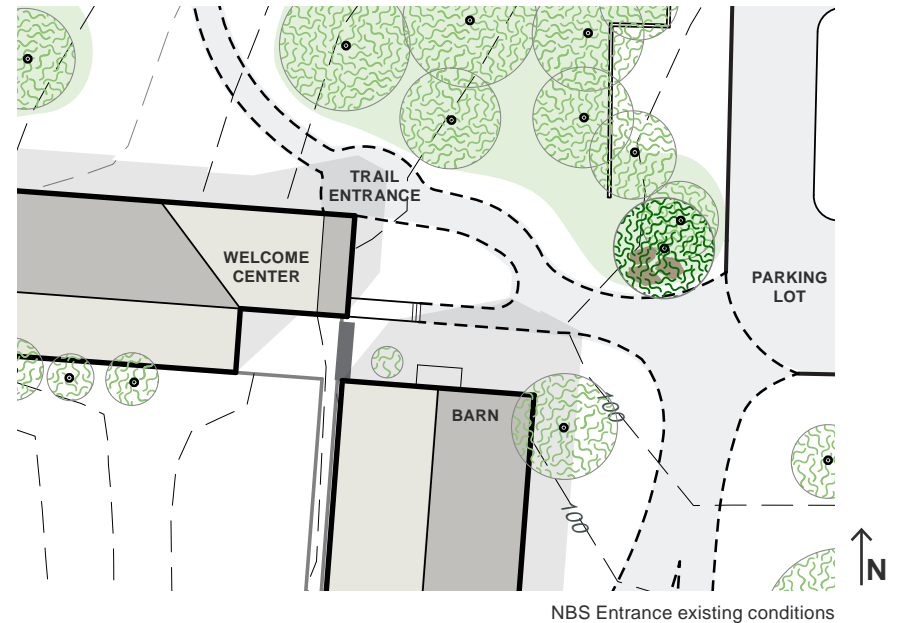
Design for Main Entrance

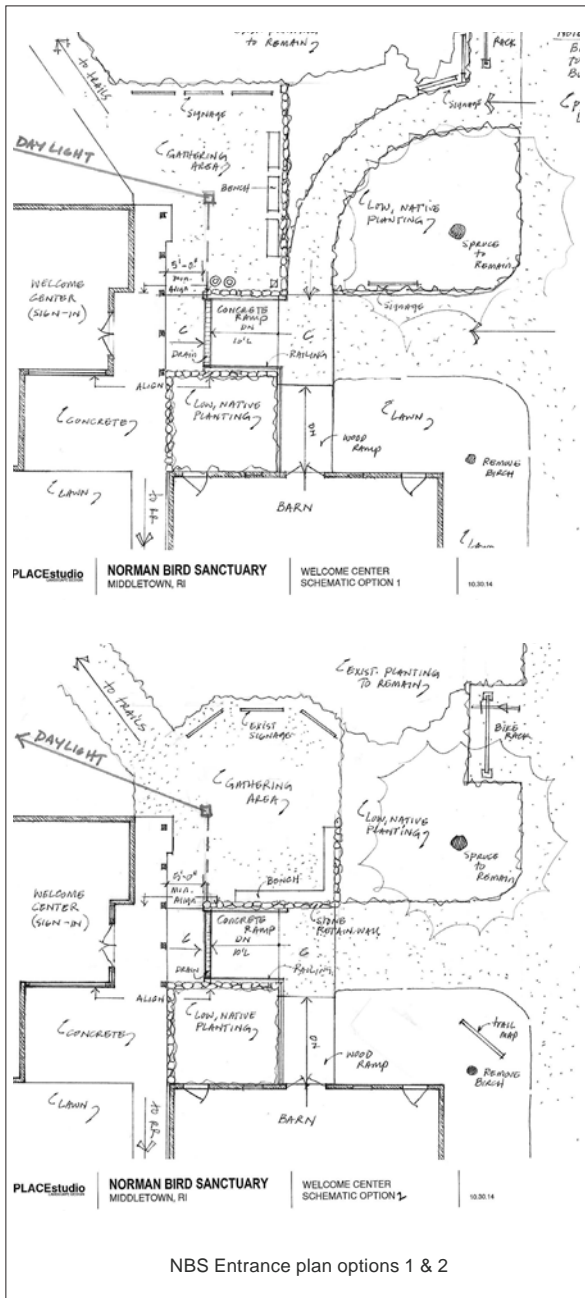
GOALS & OBJECTIVES FOR NEW DESIGN

- Make the main entrance accessible.
- Mitigate stormwater erosion and puddling from parking lot.
- Encourage visitors to sign-in at Welcome Center and access trails at one location.
- Prevent cutting through past the Welcome center directly to the trail head.
- Provide increased visibility to the entrance and Welcome Center.
- Provide multiple locations for informational signage at entrance.
- Create a gathering area outside the Welcome Center for small groups.
- Provide amenities such as trash receptacles and seating and bike rack at parking area and at lower level in gathering area.
- Provide education with rain garden, native plants and puddingstone boulders.

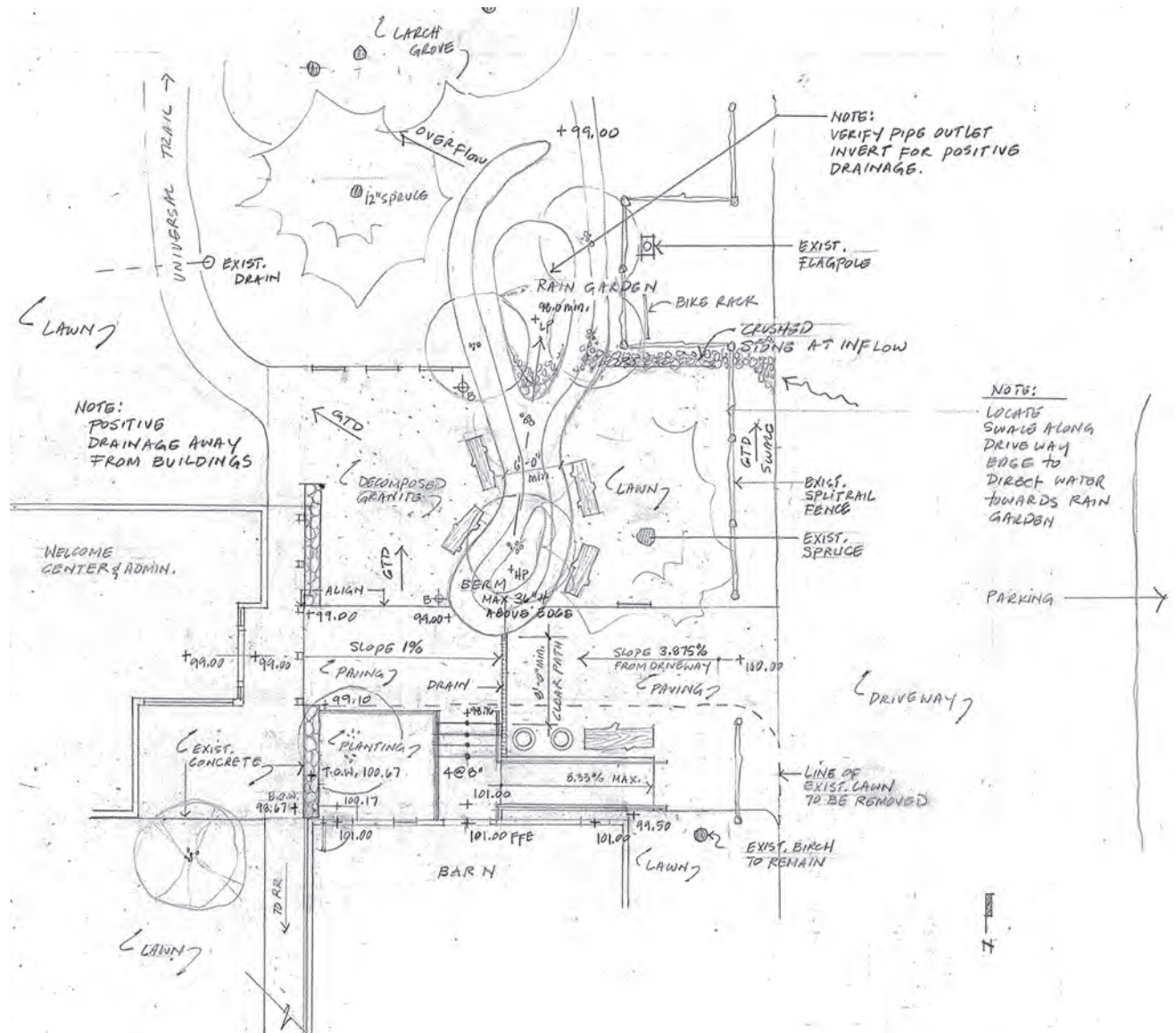
MATERIALS

- Ramps and railings at barn to be wood.
- Path to Welcome center door may be paved or may match material for universal trail.
- Stone retaining wall to match existing walls on campus. Drainage required at slope.
- Native plantings shall not impede visibility to Welcome Center entrance.





NBS Entrance plan options 1 & 2





BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
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- K GARAGE AND STORAGE
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- N COTTAGE FROM THIRD BEACH

EXISTING SIGNAGE LEGEND

- STANDARDIZED
- HAND-MADE WOOD
- NBS CUSTOM WOOD
- EDUCATIONAL
- MISC. SIGNAGE

Signage & Wayfinding

WAYFINDING DIRECTIONAL SIGNAGE LOCATIONS AND APPEARANCE

Key locations throughout the campus have been identified as potential installation points for wayfinding signage. These locations are either high visibility multi-directional intersections or key connectors to locations of value to visitors such as restrooms and the Welcome Center. These wayfinding signs should be clearly visible but should not be obtrusive. The wayfinding signs may have a visual relationship with existing signage on site or

new design may be implemented throughout the site. The design should be uniform in appearance and allow for ease of identification in the context of the landscape. In some of the locations identified, a post may be required while in other locations, the directional signs may be mounted onto an existing structure or building.

VIEW CORRIDORS

All iconic and historic campus views should be kept clear of signage at eye level. Position signage out of view corridors but keep it visible to existing circulation patterns. *See viewshed Diagram on p. 44*

ENCOURAGING ACCESS VS. LIMITING ACCESS

Encourage visitor connections from parking lot to Welcome Center and Paradise Farmhouse with appropriate signage at significant locations. Do not encourage visitors by providing directional signage where you don't want them to go. While it is inevitable that people will go where they want, try to limit visitor access by placing "No Access" signs at the Studio road and at the southwest corner of West Yard. Similarly, place signs at the parking lot fence and gate. Planting some areas or closing up wall entrances may also help.

WAYFINDING SIGNAGE LEGEND

OT OPEN ENTRANCE / NO TRESPASSING

LT LIMITED ACCESS / NO TRESPASSING

W WELCOME CTR + PKG + TRAILS

R RESTROOMS + ED SHED

B BARN + MUSEUM

F FARMHOUSE + MABEL'S GARDEN

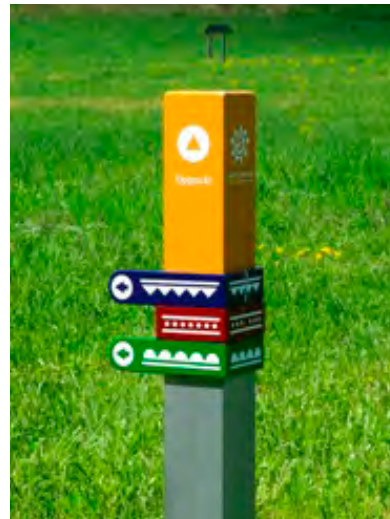
S STUDIO + CLASSROOMS

M CAMPUS MAP + HISTORY + ECOLOGY

V NO VISITOR ACCESS ALLOWED

***** LOCATION FOR WAYFINDING DIRECTIONAL SIGN

W R B F S



Examples of wayfinding directional posts.

SIGNAGE LOCATIONS

1 Main entrance sign should include reference to Paradise Farm and could read “The Norman Bird Sanctuary at Paradise Farm ca. 1750” or the date the bird sanctuary was established. A “No Trespassing” sign should be hung on the chain at the driveway openings.

2–3 Limited access entrances at the Farmhouse driveway should have “No Trespassing” signs on the gates at the driveway openings.

4 Visitors need to know where to go the minute they get out of their cars or off their bikes. Directional signage, campus map, and historic and ecological information should greet visitors as soon as possible. The Welcome Center must be clearly defined as the place to sign-in and get a trail map. The entrance is dark and it is difficult to see the door. Signage and bright colored banners advertising upcoming events could fit neatly in the upper square openings of the Welcome Center building.

5–8 Once visitors have signed in at the Welcome Center they still require ample signage to direct them around the campus and to the restrooms. The Welcome Center, parking lot and restrooms—where people wait for one other—are ideal locations for maps, history, ecology and directional signage.



1 Welcome Center entrance – view west

9–12 Trail head and directional signage at key intersections will help visitors navigate the campus and get them on their way.

Locations shown in the diagrams are approximate. Exact locations for signs can be determined on site and are based on the configuration and style of the signage system chosen.



2 Farmhouse driveway entry north—limited access



6 Classrooms + Ed Shed + Restrooms – view south



10 Wayfinding signage at lower trail head – view west



3 Farmhouse driveway entry south—limited access



4 Welcome Center entrance – view west



5 Barn + Museum – view east



7 Campus map, history, ecology in Barn Yard



8 Welcome Center – view north



9 Welcome Center view south – wayfinding at trail head



11 Wayfinding signage at interior road – view south



12 Wayfinding signage outside the Barn Yard – view west



13 Studio + Classroom signage – view west

Analysis and Evaluation

SIGNAGE PRECEDENTS



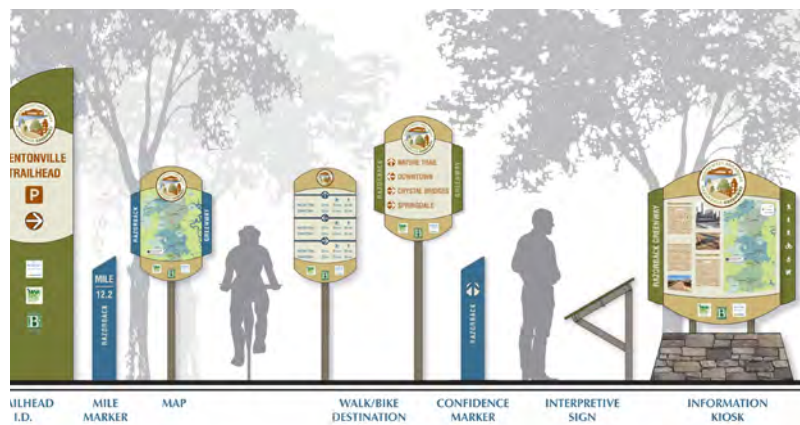
Signage and Wayfinding Systems



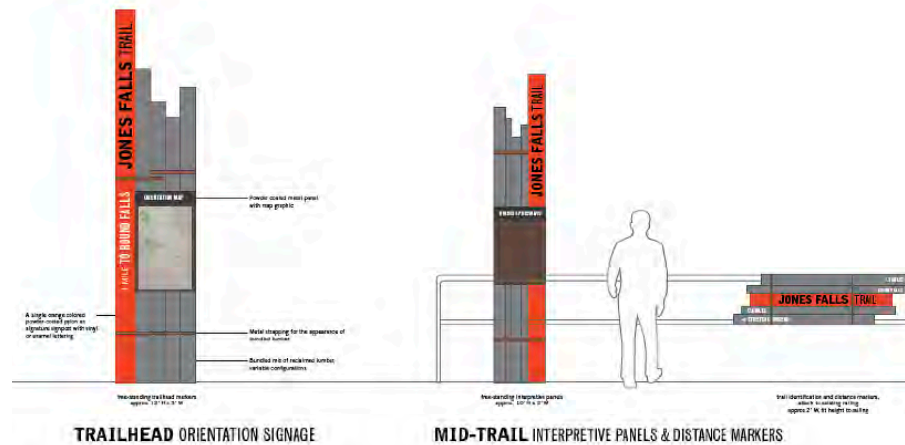
Informational Signage



Image Vocabularies for Wayfinding



Signage and Wayfinding Systems



Signage Materials

Stone Walls, Fences & Gates

STONE WALLS

- Stone walls should be properly maintained especially at perimeter gates to prevent trespassing.
- Any new tree planting should keep a distance of at least 10 feet from stone walls.

FENCES & GATES

- Fences should be properly maintained.
- A consistent fence type should be determined for all internal campus fences.
- A consistent fence type should be determined for the north and south agricultural fields.
- “Farm” gates along Third Beach Road and adjacent to the north and south agricultural fields should be consistent in design.
- The new gates at Mabel's Garden should be used as a model for all internal campus gates.

Off-Campus & Archeological Sites

SHEEP PEN, GRAVEYARDS, HANGING ROCK, QUARRY, SHELL MIDDEN, POETRY ROCK

- It has been determined that the NBS would rather not promote the locations of the sheep pen, graveyard or shell midden. No clearing is recommended for these sites.
- The Poetry Rock should be kept clear of vegetation and can remain something “found” by visitors.
- The Family Graveyard presents a good opportunity to promote the history of NBS.
- The slate shingle Quarry may be an opportunity to promote a part of the working past of NBS that most people may not know.
- Hanging Rock remains forever iconic.

Off-Campus Education Sites

TEDDY ROCK, YEW FOREST & SQUANTO'S GARDEN

- There are no recommendations for Teddy Rock and the yew forest.
- Squanto's Garden is now in shade. Either there needs to be some clearing or Squanto's Garden should be moved to a sunnier location.

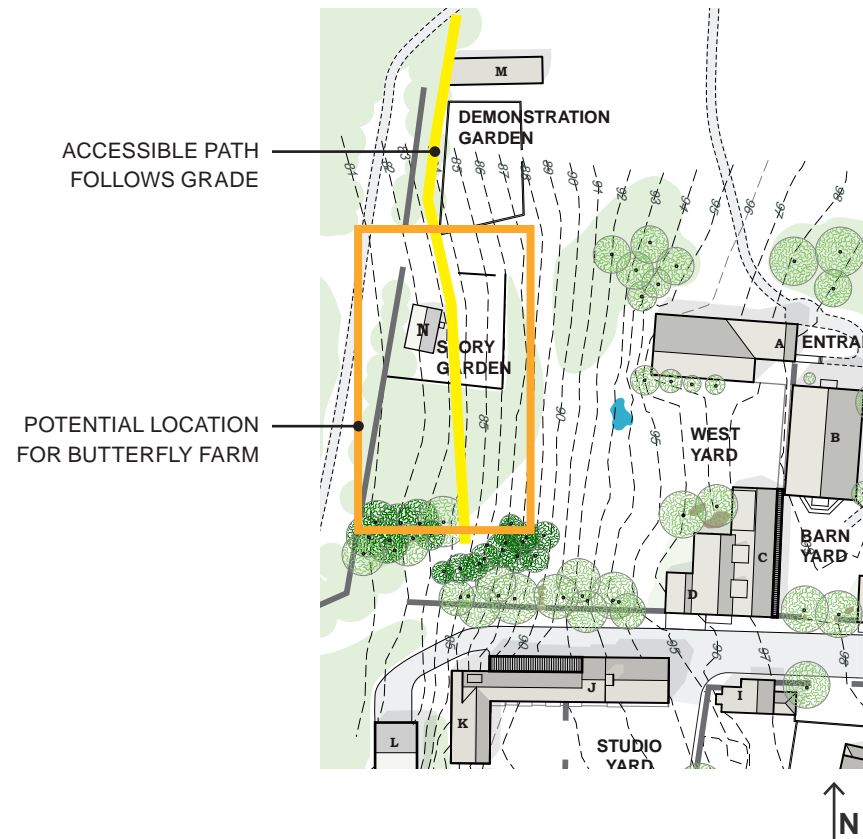
Story Garden & West Yard

RECOMMENDATIONS

- Replace invasive trees and shrubs with native plantings.
- Create walkable connection along grade from West Yard to Demonstration Garden.

BUTTERFLY FARM

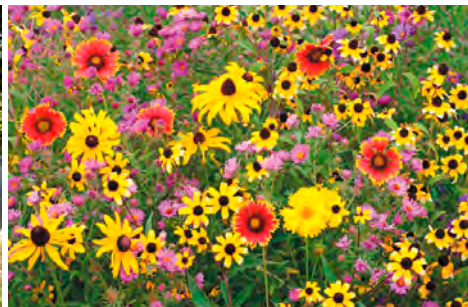
- Explore the possibility of creating a butterfly farm in this location.
- Exhibits that educate and encourage people to support the creation and preservation of native butterfly habitats have become increasingly popular as more is understood about significant species depletion and habitat loss. A great place to learn about butterflies and their habitat is at a butterfly house, where visitors walk through and observe live butterflies in an enclosed environment. Well designed butterfly gardens where visitors can see live butterflies interacting with native plants also promotes conservation.



Fields



Butterfly farm



Wildflower fields



Monarch butterfly

Maintenance & Budget

MAINTENANCE SCHEDULE

Item	Action	Comments	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
Lawn Areas and along interior Stone Walls	mow and edge	every week or as needed												
	weed	as needed												
	seed	as needed												
	compost													
North and South Agricultural Fields	mow	prior to Harvest Fair												
Trees and shrubs	weed	as needed												
	plant	in unfrozen ground												
	compost	organic												
	leaf mulch													
Orchard and other fruit trees	pruning	as needed												
	weed	as needed												
	plant	in unfrozen ground												
	compost													
Driveway and walkways	prune and thin													
	weed	as needed												
	rake gravel													
Litter and Debris removal	snow removal	as needed												
Main Entrance - Native Perennials	weed	as needed												
	plant	replace plants as needed												
	compost	as needed												
	leaf mulch													
Mabel's Garden - Native Perennials	weed	as needed												
	plant	replace plants as needed												
	compost	as needed												
	leaf mulch													
	deadhead	as needed												
	cutback dead plants													
Demonstration Garden - Veggies & Herbs	edge beds													
	weed	as needed												
	plant													
	compost	as needed												
	plan for spring													
	clean greenhouse													
	order seeds													
	start seeds													
	transfer seedlings to cold frames													
	plant veggies	after last frost												
	edge beds													

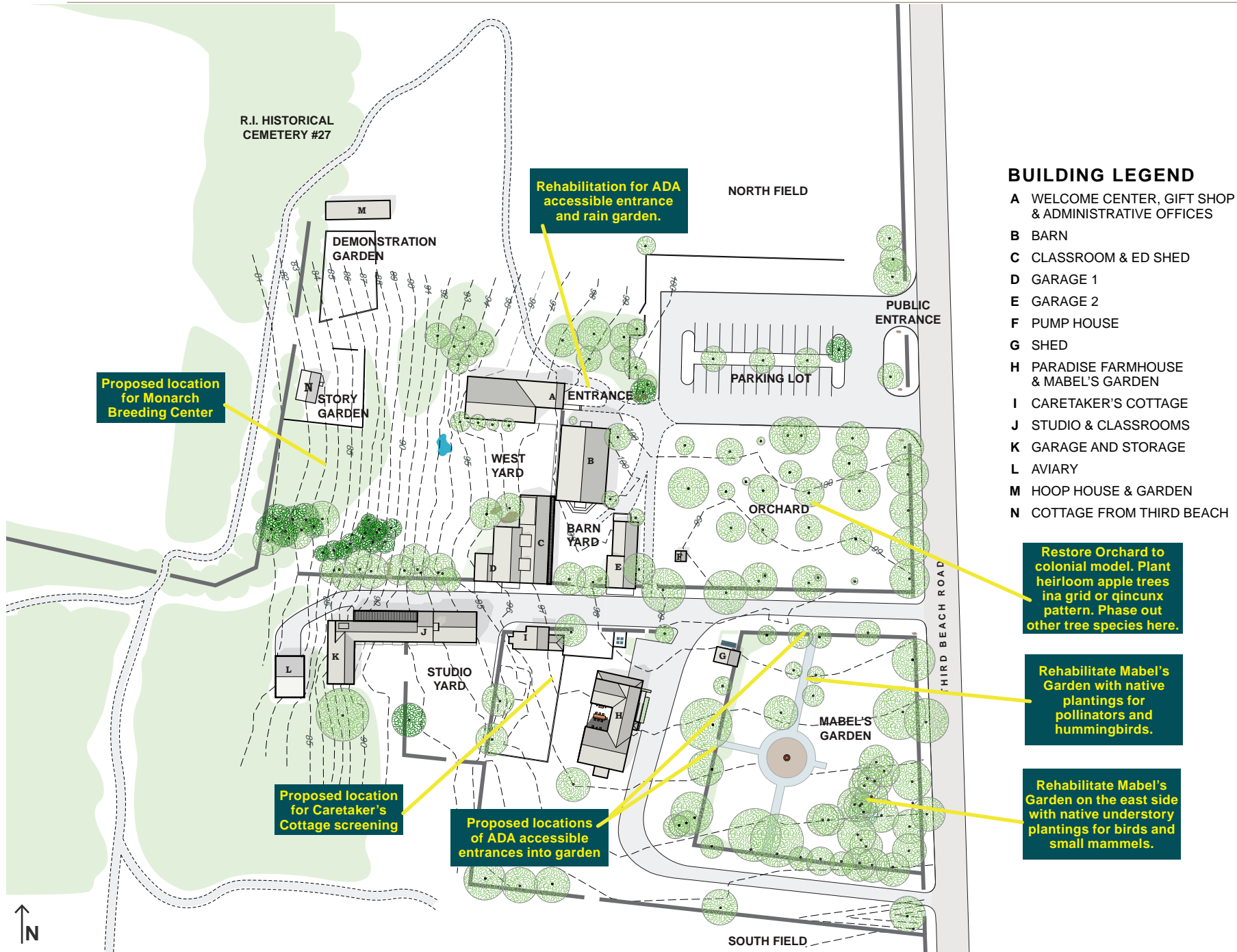
PROJECTED CAMPUS LANDSCAPE BUDGET ESTIMATES

Item	Quantity	Unit	Unit Price	Totals
Mabel's Garden				
Installation Estimate				
Accessible paths	933	lf	30	\$27,990
Perennial planting	2,800	sf	6	\$16,800
Polinator garden shrubs	156	ea	70	\$10,920
Total installation estimate				\$55,710
Additional Annual Maintenance Estimate				
Annual Maintenance Estimate				
Mabel's Garden	10 hrs per week avg. for 32 weeks	320 hrs @	35	\$11,200
Welcome Center Entry Area	10 hrs per week avg. for 32 weeks	320 hrs @	35	\$11,200
Orchard/Campus tree work	2 days spring / 2 days fall	4 days ea @	1200	\$4,800
Total additional maintenance estimate				\$27,200

Mabel's Garden Installation costs are based on the approximate planted area as per the schematic plan and is calculated with typical 2015 landscape contractor installation pricing.

Additional Annual Maintenance Estimates include both the estimated hours of labor required and the estimated cost for a professional contractor's service. These costs could be defrayed with volunteer help but it is recommended that all volunteer gardeners be supervised by a Master Gardener or other landscape professional.

It is also recommended that a professional Arborist submit a proposal for seasonal work on the Campus trees.



BUILDING LEGEND

- A WELCOME CENTER, GIFT SHOP & ADMINISTRATIVE OFFICES
- B BARN
- C CLASSROOM & ED SHED
- D GARAGE 1
- E GARAGE 2
- F PUMP HOUSE
- G SHED
- H PARADISE FARMHOUSE & MABEL'S GARDEN
- I CARETAKER'S COTTAGE
- J STUDIO & CLASSROOMS
- K GARAGE AND STORAGE
- L AVIARY
- M HOOP HOUSE & GARDEN
- N COTTAGE FROM THIRD BEACH

Treatment

Norman Bird Sanctuary Management Philosophy

The Norman Bird Sanctuary Campus is a valuable cultural resource for the local and regional communities and for the nation as well. Based on the cultural landscape evaluation, the character of the Norman Bird Sanctuary Campus ties most directly to a colonial New England farm, however, according to the NRHP it's period of significance is from 1750-1949. Although NBS has modified the campus over the years to accommodate daily operations and programming needs the key historic features, circulation, relationships and iconic views of the Farmhouse Barn and stonewalls and Orchard remain intact.

Each era made its mark on NBS and no attempt is made here to return the campus back to a any specific period in time. Design treatments and cultural landscape management focus on the integration and interpretation of cultural features remaining from all time periods as a way to enhance visitor understanding of the important features of the site.

The Norman Bird Sanctuary extends to 325 acres of habitat for many varieties of birds, mammals, reptiles and aquatic species. The campus is an ambassador for the rest of the property by promoting environmental education and stewardship. Just as the agricultural fields have been appropriated for birds so too Mabel's Garden and the Welcome Center Entrance should support birds and insects for the public to see. Under-represented native plants should be brought to the fore here at the campus to provide a greater understanding of forest structures and habitat.

NOTE This report was written at the same time as The Invasive Management Plan by Horsley-Whitten Group which describes strategies for invasive plant management. Invasives are found on the campus as well and recommendations made in their report should be applied to the campus plan where invasive species pose a threat.

Preservation Strategies

Overall Strategies

- Overall Campus preservation strategies include tree maintenance, invasive management, preservation of stone walls and protection of iconic views. Specimen trees, dating back to the presence of the Colonial Revival garden, should be replaced in kind with available nursery stock.
- The Orchard requires some restoration and removal of all trees other than apples. The apple trees should be replaced as needed with heirloom variety apples.

CAMPUS INTEGRITY

- Strategies for long-term management of the Norman Bird Sanctuary Campus is based on its significance as documented in the NRHP report of 2012. Elements of the campus that we are concerned with for this report included stone walls (contributing structures) and Orchard and Family Garden aka Mabel's Garden (contributing landscape features). Additional contributing landscape features outside the Campus include; The Family Graveyard, Graveyard, Quarry, Hanging Rock and Sheep Pen.
- Strategies for long-term management of the Norman Bird Sanctuary off-campus sites is based on their significance as documented in the NRHP report of 2012. Hanging Rock, the Quarry, and The Family Graveyard would benefit from discrete signage. The graveyard and sheep pen will not be enhanced nor promoted to the public in any way.

LANDSCAPE USE & ETHNOGRAPHIC VALUE

- The character of the working landscape of NBS has a layered history. Agriculture fields have become nesting habitat for migratory birds. Streams have been dammed to form ponds. These interventions both natural and man-made create and sustain the character of Paradise Farm as it was in the 1700's which is remarkable.
- The natural and cultural resources on the campus site do not seem to be in conflict however, ornamental planting, especially in Mabel's Garden should take precedence over native substitutes which are part of the overall planting recommendations. There was some discussion regarding Norway maples and Sycamore maples not being invasive on this property. These were planted as ornamental trees during Mabel's tenure. These are generally considered to be invasive and should not be replaced in kind. The Quarry has value as a cultural resource for its past manufacture of slate roof shingles.
- The Shell Midden is evidence of pre-colonial Native American settlement in the area.
- A complete documentation for the National Parks Service of Paradise Farm formatted for the Historic American Landscape Survey (H.A.L.S.) would be an important effort for this property. Completed and approved documentation is accepted into the Library of Congress in Washington, DC. *See Appendix.*

DESIGN INTENT

- The overall design intent is to maintain the historic character and integrity of Paradise Farm, educate the public to the importance of this cultural landscape, and to address the need for accessibility for all visitors and employees of the Norman Bird Sanctuary. In addition to, and no less important, is the augmentation and creation, where possible, of a variety of native habitats and food sources for wildlife, especially birds within the NBS Campus.
- Areas of importance and priority for rehabilitation include the Welcome Center Entrance and Mabel's Garden. The Welcome Center entrance will effect the integrity of the historic Barn and should be addressed. Both areas should be planted with native plants. Mabel's Garden has some ornamentals from the 1915 Colonial Revival renovation and these should be replaced in kind unless they are now considered invasive.
- Paradise Farmhouse has native plantings at the front entrance. Additional thought might be given to the ramp and stair design at the entrance.
- An area of minor importance is the area between the Caretaker's Cottage and Paradise Farmhouse which requires plant screening. These plants should be native.

Management Objectives

MAINTENANCE & SUSTAINABILITY

- The NBS campus will require ongoing maintenance of its trees, walls, fences, gates, lighting, signage and paths. Sustainable practices regarding tree care is important. Some work may be done by volunteers with supervision. Gates and signage may require painting. Paths will need to be repaired. Exterior lighting should be replaced with LED or Solar.
- Interpretive signage should be made an integral part of the overall Campus design.

HEALTH AND SAFETY

- Health and safety strategies include ADA accessible entrances at the Welcome Center, the Barn and Mabel's Garden. Comprehensive plans for lighting and wayfinding signage will add a significant degree of safety for visitors.
- The Character of the Barn should be maintained as much as possible.



FUNDING OPPORTUNITIES

- U.S. Fish and Wildlife Service- funding is available for Monarch butterfly related programs. *See appendix*
- Possible funding through National Parks Service - Preserve America Grants.
- Historic tourism; Colonial farm tours. Engage with Historic New England and NRF to create a weekend tour of NBS, Prescott, Watson, Casey, Coogan Farms (in Mystic, CT) and others. Name the un-named pond.
- Adopt-a-wall.
- Member's Day- current members bring a new member and share family photos of NBS.
- Celebrate Mabel's birthday, May 30th, 1876, with a "birdday" cake auction and bake sale.
- Continued private donations of trees and amenities.
- There may be funding through RI Seagrant for the rain garden at the new Welcome Center Entrance.



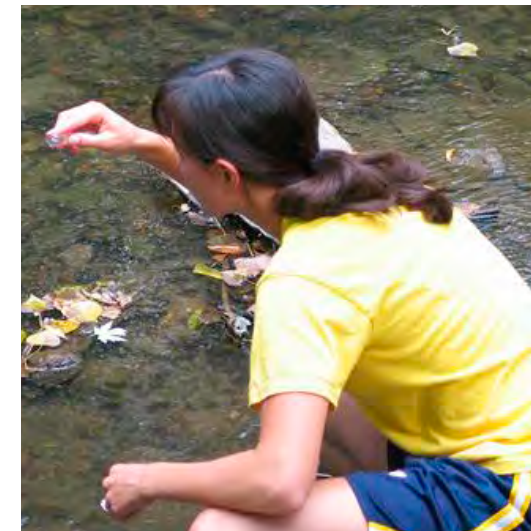
COMMUNITY VOLUNTEERS

- Volunteers currently assist all staff. Volunteers assist the caretaker with cemetery and garden maintenance, and events.
- Docents may be used to give NBS campus tours.
- NBS "Work Weekends" twice a year will help with Fall and Spring clean-up on the campus.

Apply for URI Master Gardener support for Mabel's Garden and pollinator gardens.

Download the PDF for a URI Master Gardener Project Request form at <http://www.urimastergardeners.org/community-projects>

There is no deadline for the Project Request form submission. For more information, contact Scott Douglas scott.douglas@demo-garden.com



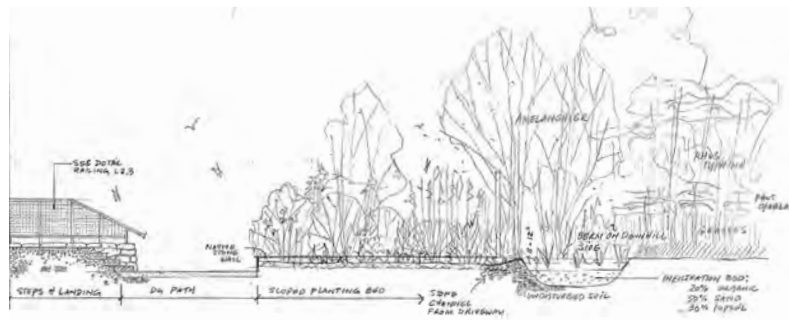
Proposed Gardens

WELCOME CENTER ENTRANCE

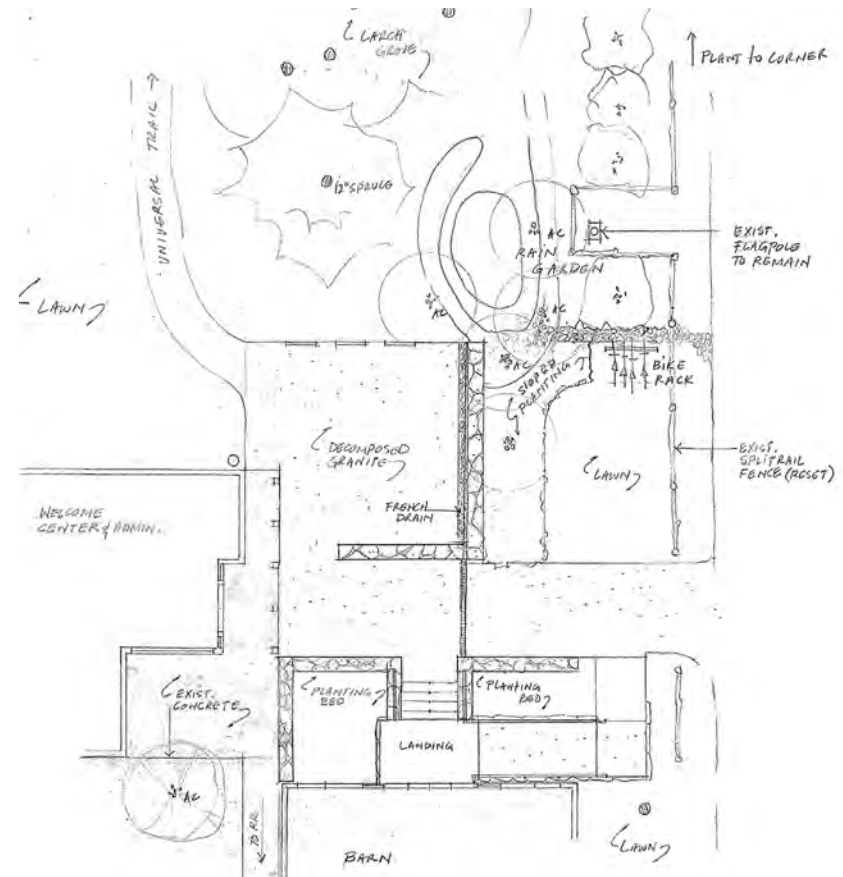
- Proposed additions to the Welcome Center are comprehensive and include regrading to meet ADA standards and take water away from the entrance, new steps and wood ramp at Barn entrance, bluestone walkway to main entrance, wall repair and the addition of a wall along the concrete walkway, and a rain garden with Rhode Island native plantings.



SECTION THRU ENTRANCE - VIEW NORTH



SECTION THRU ENTRANCE - VIEW WEST



ENTRANCE - PLAN

Welcome Center entrance proposed design



MABEL'S GARDEN

- Proposed additions to Mabel's Garden include additional paths at the north and west entrance, new perimeter paths along the border flower beds on the west side with connections at the north and south sides, a trail through the woodland, and native planting throughout. The woodland trail will mimic a native understory planting.

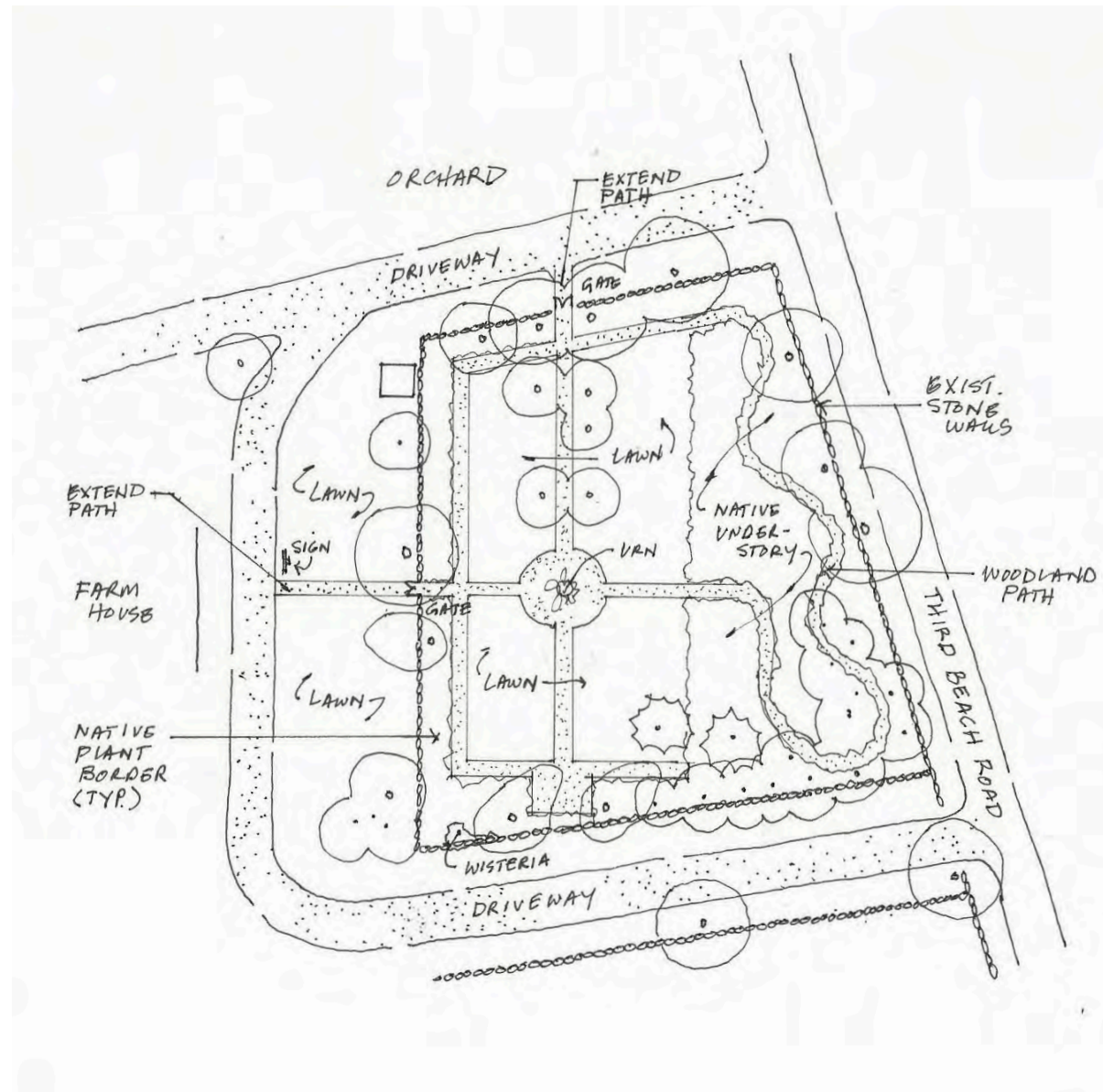
Additional Planting Opportunities

FARMHOUSE ENTRANCE

- Native perennials were planted in the spring of 2014.

CARETAKER'S COTTAGE

- A mix of native trees and evergreens are recommended to be planted for screening the Farmhouse from the Caretaker's Cottage.



Proposed design for native species education garden.



Educational Opportunities

PLANT GUIDES

- Welcome Center Entrance and Wildlife Garden
- Mabel's Garden

Develop two brochures for sale which promote native garden plants. Brochures should include garden plans and information on plants found there. Plant photos, scientific and common names, attributes and value to wildlife as well as plant availability and links should be included as well.

OUTREACH

- Reach out to Brown Universities Herbarium to collect botanical specimens from NBS. Timothy_Whitfeld@brown.edu



Record of Treatment

Intent of Work

The intent of this work is to create a comprehensive assessment of the NBS Campus with particular emphasis on its cultural heritage. The importance of Paradise Farm, as a New England colonial farm, contributes to local, regional history as well as being of national importance. This comprehensive assessment highlights this history, assesses the current conditions, and makes recommendations for improvements based on that assessment. This effort will serve as a basis for future campus improvements and as a directive for ongoing maintenance strategies.

Approach, Execution, Time & Cost of Work

APPROACH & EXECUTION

Inventory of existing conditions were documented over the course of the summer of 2014. Historical research was conducted simultaneously and into the fall of 2014. Written and graphic analysis, evaluations and recommendations were written, researched and diagrammed through to the spring of 2015.

TIME & COST OF WORK

Contract was signed on March 28th, 2014 and work on the Report began on the same date. The final draft was completed on May 10th, 2015. The cost of the work was \$10,000.00, approximately 66 hours of donated time at cost which was given in the form of an in-kind donation of \$2,000.00.

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<http://www.capri.net/en/famous-visitors>

<http://trove.nla.gov.au/ndp/del/article/52675765>

http://nctc.fws.gov/Pubs9/NWRS_history_color01.pdf

<http://www.nps.gov/Nr/>

http://books.google.com/books?id=JK8yA-QAAMAAJ&pg=PA495&lpg=PA495&dq=-george+H.+norman+newport+daily+news&-source=bl&ots=J7EurT5LbI&sig=eBOP6hh-3HO6N_70rZYhB0aO8&hl=en&sa=X&ei=7Ut-JVlqqDY6vyAT02oDIAw&ved=0CEMQ6AEwB-w#v=onepage&q=george%20H.%20norman%20newport%20daily%20news&f=true

<http://www.audubon.org/news/monarch-butterflies-dwindle-triple-threat-rises>

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Glossary

- **Accessibility** refers to the design of products, devices, services, or environments for people with disabilities.
- **ADA (Americans with Disabilities Act)**
- **Allée** a walkway lined with trees or tall shrubs
- **Amenity** something that conduces to comfort, convenience, or enjoyment
- ***Analysis and evaluation** The study of a cultural landscape in terms of its individual landscape characteristics and associated features, and the determination of the landscape's integrity and significance based on a comparison of its site history and existing conditions.
- **Berm** is a level space, shelf, or raised barrier separating two areas. It can serve as a border barrier.
- **Biotic cultural resources** Plant and animal communities associated with human settlement and use, which may reflect social, functional, economic, ornamental, or traditional uses of the land. Within a cultural landscape, biotic cultural resources are recognized either as a system or as individual features that contribute to the significance of a landscape.
- **Centro Caprense Ignazio Cerio** Museum and Library with over 20,000 geo-palaeontological, prehistoric and archaeological exhibits, as well as a vast collection of antique books, maps manuscripts and photographs which reconstruct the history of Capri, Italy.
- **Circulation** A type of landscape characteristic. The spaces, features, and applied material finishes that constitute the systems of movement in a landscape. Examples of features associated with circulation include paths, sidewalks, roads, and canals.
- **Colonial Revival Style** (1900-1940) Eastern American regional style of architecture and landscape Architecture.
- **Conservancy** an association dedicated to the protection of the environment and its resources. <http://dictionary.reference.com/browse/conservancy>
- **Constructed water feature** A type of landscape characteristic. The built features and elements that use water for aesthetic or utilitarian functions in the landscape.
- **Cruciform** means having the shape of a cross or Christian cross.
- **Cultural Landscape** is defined as “a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.” www.nps.gov/tps/.../36-cultural-landscapes.htm
- **Cultural Landscape Report** A report that serves as the primary guide to treatment and use of a cultural landscape, and that prescribes the treatment and management of the physical attributes and biotic systems of a landscape, and use when use contributes to historical significance.
- **Dark Sky Movement** is a campaign to reduce light pollution for wildlife and to increase the number of stars visible at night.
- **Decomposed granite (DG)** Decomposed granite, or DG, is made up of granite aggregates a 1/4” or smaller. It is so fine that it resembles sand. Decomposed granite is the least expensive way to pave a patio, walkway, or driveway.
- **Designed historic landscape** a landscape that has significance as a design or work of art; a landscape consciously designed and laid out by a master gardener, landscape architect, or horticulturist to a design principle, or an owner or other amateur using a recognized style or tradition in response or reaction to a recognized style or tradition; a landscape having a historical association with a significant person, trend, event, etc. in landscape gardening or landscape architecture; or a landscape having a significant relationship to the theory or practice of landscape architecture. http://www.nps.gov/nr/publications/bulletins/nrb18/nrb18_2.htm
- **Design intent** The creative objectives of a designer, architect, landscape architect, engineer, or artist that were applied to the development of a cultural landscape.
- ***Documentation** Drawings, photographs, writings, and other media that depict cultural and natural resources.

Appendix: Bibliography & Glossary

- **Ecosystem** Interrelated living entities, including humans and their physical environment.
- **Emerald Necklace** (1878- 1880) a linear system of parks designed by Frederick Law Olmsted to connect Boston Common, dating from the colonial period, and Public Garden (1837) to Franklin Park, known as the “great country park.” It was an effort to clean up and control the marshy area which became the Back Bay and The Fens.
- **Epicormic growth** are shoots which sprout from epicormic buds which lie dormant beneath the bark. In fruit trees these shoots require regular pruning for the health of the tree as well as to direct resources to the tree fruit.[3]
- **Ethnographic landscape** is a cultural landscape containing a variety of natural and cultural resources that the associated people define as heritage resources. tclf.org/content/ethnographic-landscape
- **Gardenesque** style of garden design evolved during the 1820’s from Humphrey Repton’s Picturesque style. The main characteristic of this style is that all the plantings are positioned and managed in such a way that each plant can be displayed to its full potential in scattered planting. Features include winding paths, dotted island beds, expanses of grass, and tree planted mounds.
- **Green infrastructure** is an approach to water management that protects, restores, or mimics the natural water cycle. Green infrastructure is effective, economical, and enhances community safety and quality of life. It means planting trees and restoring wetlands, rather than building a costly new water treatment plant. www.americanrivers.org/.../green-infrastructure/
- **Habitat** is an ecological or environmental area that is inhabited by a particular species of animal, plant, or other type of organism. It is the natural environment in which an organism lives, or the physical environment that surrounds a species population. A habitat is made up of physical factors such as soil, moisture, range of temperature, and availability of light as well as biotic factors such as the availability of food and the presence of predators. A habitat is not necessarily a geographic area—for a parasitic organism it is the body of its host, part of the host’s body such as the digestive tract, or a cell within the host’s body. <http://en.wikipedia.org/wiki/Habitat>
- **Historic landscape** A cultural landscape associated with events, persons, design styles, or ways of life that are significant in American History, landscape architecture, archeology, engineering, and culture A landscape listed in or eligible for the National Register of Historic Places.
- **Heritage tourism** The National Trust defines heritage tourism as “traveling to experience the places, artifacts and activities that authentically represent the stories and people of the past,” and heritage tourism can include cultural, historic and natural resources.
- **Historical integrity** (1) The authenticity of a cultural landscape’s historic identity, evidenced by the survival of physical characteristics that existed during its historic or prehistoric period. (2) The extent to which a cultural landscape retains its historic appearance.
- ***Historical significance** The meaning or value ascribed to a structure, landscape, object, or site based on the National Register criteria for evaluation. It normally stems from a combination of association and integrity.
- **Invasive plants species** which are non-native to the ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health
- **Landscape architecture** is a multi-disciplinary field, incorporating aspects of botany, horticulture, the fine arts, architecture, industrial design, geology and psychology the earth sciences, environmental, geography, and ecology. en.wikipedia.org/wiki/Landscape_architecture

- **Land trust** is a simple, inexpensive method for handling the ownership of real estate. It is an arrangement by which the recorded title to the real estate is held by a trustee, but all the rights and conveniences of ownership are exercised by the beneficial owner (beneficiary) whose interest is not disclosed. www.idfpr.com
- **Luminist painters** 1850-1870's grew out of Hudson River School. Mainly landscapes depicting calm and tranquil scenes with no evidence of brush strokes. Artist's included John F. Kensett, James A. Suydam, William Trost Richards, and John Lafarge.
- **Migratory bird Act of 1918** Established for the protection of migratory birds... Or any part, nest, or egg of any such bird.
- **National Register of Historic Places (NRHP)** is the United States federal government's official list of districts, sites, buildings, structures, and objects deemed worthy of preservation. en.wikipedia.org/wiki/National_Register_of_Historic_Places
- **Native plants** is a term used to describe plants endemic (indigenous) to a given area in geologic time. This includes plants that have developed, occur naturally, or existed for many years in an area (e.g. trees, flowers, grasses, and other plants).
- **Olmsted Frederick Law Olmsted** (April 26, 1822 – August 28, 1903) was an American landscape architect, journalist, social critic, and public administrator. He is popularly considered to be the father of American

landscape architecture, although many scholars have bestowed that title upon Andrew Jackson Downing. Olmsted was famous for co-designing many well-known urban parks with his senior partner Calvert Vaux, including Central Park and Prospect Park in New York City,[2] as well as Elm Park (Worcester, Massachusetts), considered by many to be the first municipal park in America. http://en.wikipedia.org/wiki/Frederick_Law_Olmsted

- **Parterres** a level space in a garden or yard occupied by an ornamental arrangement of flower beds.
- **Period of Significance** The span of time for which a cultural landscape attains historical significance and for which meets National Register criteria.
- **Preservation** The act or process of applying measures to sustain the existing form, integrity, and material of a cultural landscape.
- **Picturesque style** Evolved predominantly from mid-18th century British landscape design theory, this style sought to evoke "natural" landscape appearance of rougher terrain and dramatic asymmetric composition in contrast to the axial geometry of earlier Renaissance and Baroque landscapes, such as Versailles. While British landscape critics distinguished the "Beautiful" (as seen in the rolling pastoral designs of Lancelot "Capability" Brown) from the wildly dramatic "Picturesque" (replete with ravines, dead trees and artificial ruins, America combined these alternative approaches to the "natural" landscape aesthetic within the

term, "The Picturesque." The Picturesque style remained popular from the 1840s well into the early 20th century.

- **Pollinator habitat** area of permanent vegetation located in an agricultural landscape field edges, field middles, odd corners, or virtually any location that is suited for butterflies, insects and birds. Vegetation consists of acceptable herbaceous and/or woody plants.
- **Priority species** A priority species is one that is particularly threatened in terms of the species' long-term survival. All priority species have been selected through rigorous scientific analysis, and most represent a broad array of other birds and wildlife that use the same habitat type.
- **Protection** Action to safeguard a cultural landscape by defending or guarding it from further deterioration, loss, or attack or shielding it from danger or injury.
- **Quincunx** is a geometric pattern consisting of five points arranged in a cross, with four of them forming a square or rectangle and a fifth at its center. It forms the arrangement of five units in the pattern corresponding to the five-spot on six-sided dice and is used in traditional orchard layout.
- **Reconstruction** (1) The act or process of depicting, by means of new work, the form, features, and detailing of a non-surviving cultural landscape, or any part thereof, for the purpose of replicating its appearance at a specific time and in its historic location. (2) The

resulting cultural landscape, or part thereof.

Record of treatment A compilation of information documenting actual treatment, including accounting data, photographs, sketches, and narratives outlining the course of work, conditions encountered, and materials used.

- **Rehabilitation** The act or process of making possible an efficient compatible use for a cultural landscape through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural and architectural values.
- **Restoration** (1) The act or process of accurately depicting the form, features, and character of a cultural landscape as it appeared at a particular period by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. (2) The resulting cultural landscape.
- **Salt hay farming** New England coastal colonial practice of harvesting and sale of salt hay or salt marsh grasses.
- **Statement of significance** An explanation of how a cultural landscape, or part of a cultural landscape, meets the National Register criteria, drawing on facts about the history and the historic trends- local, state, national- that the property reflects.
- **Storm water management** is often used to refer to both structural or engineered control devices and systems (e.g. retention ponds) to treat or store polluted storm-water, as well as operational or procedural practices. http://en.wikipedia.org/wiki/Stormwater#Stormwater_management
- **Sustainability** is the endurance of systems and processes. The organizing principle for sustainability is sustainable development, which includes the four interconnected domains ecology, economics, politics and culture. <http://en.wikipedia.org/wiki/Sustainability>
- **Treatment plan** A plan that graphically depicts a preservation strategy and actions for treatment of a cultural landscape including preservation, rehabilitation, restoration, and reconstruction.
- **Understory** a layer of vegetation beneath the main canopy of a forest.
- **Universal access trail** All trails and shared use paths—indeed, any areas open to pedestrians—that are owned or operated by a public or private entity covered by the Americans with Disabilities
- **Views and vistas** A type of landscape characteristic. The prospect created by a range of vision in the cultural landscape, conferred by the composition of other landscape characteristics.
- **Viewshed** is an area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point. In urban planning, viewsheds tend to be areas of particular scenic or historic value that are deemed worthy of preservation against development or other change. <http://en.wikipedia.org/wiki/Viewshed>
- **Watershed** is “that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community.” John Wesley Powell from <http://water.epa.gov/type/watersheds/whatis.cfm>
- **Wayfinding** encompasses all of the ways in which people and animals orient themselves in physical space and navigate from place to place.
- **Wildlife refuge** is an area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly regulated.
- **Working landscape** is a broad term that expresses the goal of fostering landscapes where production of market goods and ecosystem services is mutually reinforcing. It means working with people as partners to create landscapes and ecosystems that benefit humanity and the planet.

