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CULTURAL LANDSCAPE REPORT FOR JOHN MUIR NATIONAL HISTORIC SITE

VOLUME 2: TREATMENT



CULTURAL LANDSCAPE REPORT FOR JOHN MUIR NATIONAL HISTORIC SITE

*“The wedges of
development are being
driven hard and none
of the obstacles of
nature can long
withstand the march
of this immeasurable
industry.”*

Volume 2:

TREATMENT

By Jeffrey Killion
Historical Landscape Architect

National Park Service, Boston, Massachusetts, 2005

The Olmsted Center for Landscape Preservation promotes the stewardship of significant landscapes through research, planning, and sustainable preservation maintenance. The Center accomplishes its mission in collaboration with a network of partners including national parks, universities, government agencies, and private nonprofit organizations. Techniques and principles of preservation practice are made available through training and publications.

Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617.566.1689
www.nps.gov/oclp/

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Cover Photo: View looking southeast in c.1905 at the Muir House and the surrounding orchards and vineyards. (F13, Fr.#645. Holt- Atherton)

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INTRODUCTION

PURPOSE OF THIS REPORT

The Cultural Landscape Report (CLR) for the John Muir National Historic Site (NHS) includes a site history, existing conditions assessment, analysis of significance and integrity, and treatment recommendations to guide management of the park's cultural landscape. This report represents the second volume of the CLR and is based on the findings of the first report (Volume 1: Site History, Existing Conditions, and Analysis). The treatment plan is intended to direct physical work on the landscape so that the distinguishing characteristics and features that contribute to the significance of the property are preserved.

The John Muir NHS is located in Martinez, California, and includes the residence of John Muir, America's most famous and influential naturalist and conservationist. Muir is remembered for his role in creating several national parks, founding the Sierra Club, and promoting the benefits of experiencing and protecting our natural heritage. A prolific writer and frequent traveler, Muir also established himself as a savvy businessman and capable husband and father during his time in Martinez. His successes in managing his father-in-law's vast fruit ranch allowed him to provide a comfortable life for his family and devote the last twenty-five years of his life to promoting the value of wilderness and the need for natural resource conservation.

In addition to the Muir House, built in 1882, the park includes the 1849 Martinez Adobe, the family gravesite, lands that were farmed with orchards and vineyards, and rugged areas of grasslands and woodlands that Muir purposely left untouched. The period of significance for the park extends from 1849 to 1914, which recognizes the construction of the adobe and Muir's death in 1914.

The park is composed of three separate land units – the 8.9-acre House Unit, the 326-acre Mt. Wanda Unit, and the 1.3-acre Gravesite Unit – that together represent a small portion of the Strentzel-Muir Ranch that at its peak encompassed over 2300 acres (Figure 0.1). In August 1964, in advance of suburban development, the National Park Service (NPS) acquired the House Unit, which includes the Muir House, Martinez Adobe, and historic orchard and vineyard spaces. In 1988, the park's boundaries grew considerably with the acquisition of much of Mt. Wanda and the Strentzel-Muir gravesite area. The Mt. Wanda Unit (acquisition completed in 1991/92) was desired primarily because its steep wooded hillsides and remote grasslands – which were a favorite

destination of Muir and his family – had escaped the advance of suburban development in the 1960s. The most recent acquisition was the Gravesite Unit (acquired in 2000) and includes the graves of John Muir and some of his family as well as a remnant pear orchard. The city tract, a small area of both flat and steeply sloped land that extends up the north slope of Mt. Wanda to the BN- SF railroad right- of way, connects the House and Mt. Wanda units and is the location of the Maintenance Building and a proposed parking lot. The treatment recommendations in this report consider all three units; however, the level of detail is much greater at the House Unit because the majority of the park’s historic resources are located there.

METHODOLOGY AND FORMAT

The treatment recommendations and plans in this report prescribe how the landscape at John Muir NHS should be managed based on its significance, existing conditions, and use. The premise of this plan is that the park should be managed to improve the condition of landscape features and historic character so that the site’s rich history can be interpreted and understood. To this end, the Treatment Plan is composed of three chapters:

CHAPTER 1: TREATMENT PHILOSOPHY AND APPROACH

This chapter presents the overarching principles and issues that frame the recommendations in the subsequent chapters of the report. This includes an overview of the historic character of the site; discussions related to management objectives, philosophies, and treatment issues; presentation of treatment alternatives and selection of a preferred treatment (rehabilitation); and a list of goals that define the treatment approach and how they relate to the John Muir NHS.

CHAPTER 2: NARRATIVE TREATMENT GUIDELINES AND TASKS

This chapter includes written explanations of tasks needed to improve the historic character of the site and the condition of individual landscape features. The first section of guidelines relate to the treatment of landscape characteristics (natural systems and features, land use, circulation, topography, vegetation, buildings and structures, views, and small- scale features). The second section features treatment tasks for specific landscape features and correspond to the six character areas – Muir House and knoll, Martinez Adobe, Agriculture area, Visitor Center, Mt. Wanda, and Gravesite – described below. The tasks are further organized by grouping features under their respective landscape

characteristic. They are also represented on illustrated treatment plans at the end of the chapter.

CHAPTER 3: PRIORITY TREATMENT PROJECTS AND RECOMMENDATIONS FOR ADDITIONAL WORK

The final chapter contains a listing of projects that should be addressed as soon as possible so that historic features, and ultimately the historic character, can be improved. Additional projects are also recommended so that a comprehensive rehabilitation of the park landscape can be achieved.

APPENDICES

Three appendices include the Secretary of Interior's standards for rehabilitation treatment; selected product information and specifications; and a response letter from the State of California, Office of Historic Preservation

LANDSCAPE CHARACTER AREAS, CHARACTERISTICS, AND FEATURES

CHARACTER AREAS

As discussed in Volume 1, Chapter 8: Analysis of Landscape Characteristics and Features, this CLR is organized with a hierarchy of landscape character areas, characteristics, and features that together define the landscape at John Muir NHS. The landscape character areas have been determined by current park boundaries and landscape characteristics such as topography, types of vegetation, and concentration of buildings. The feature level treatment recommendations are organized according to the four character areas in the House Unit – Muir House and knoll, Agriculture, Martinez Adobe, and Visitor Center – as well as the Gravesite Unit and Mt. Wanda Unit character areas. They are as follows (Figure 0.2):

Muir House and knoll area (MH)

This area is the focal point of the park. Situated on top of the knoll is the rehabilitated 1882 Muir House, where John Muir lived and wrote from 1890 until his death in 1914. The slopes of the knoll are filled with mass plantings and unique specimens of trees, shrubs, and flowers – some of which were planted by Muir and his family – set amongst grassy open lawns. These late- Victorian period plantings contrast with the orthogonal rows of pruned fruit trees and grape vines set out around the knoll. The area also includes the Carriage House; the historic carriage drive- loop, Woodshed Road, and east driveway; and other historic and non- historic paths and walks that serve the house. It is subdivided

into seven smaller feature zones that generally radiate outward from the house: *north side, east side, south side, west side, and foundation*. Adjacent to these are the *west slope, east slope, and carriage drive-loop*.

Martinez Adobe area (MA)

Located on the west side of the House Unit, this area is anchored by the rehabilitated 1849 adobe, the oldest building in the park. When purchased by Dr. Strentzel in 1874, the structure served as a headquarters for the ranch and was later modified as a residence for Muir's oldest daughter Wanda and her husband Tom Hanna. As with the Muir House and knoll area, this area was generally used for domestic uses by the end of the historic period. Today, the building serves as exhibit and storage space. The area includes an open-sided ramada with picnic tables, a brick patio, walkways, a drinking fountain, and a variety of domestic plantings and lawn areas. The adobe area can also be subdivided into feature zones: *north side, east side, and west side*.

Agriculture area (AG)

This is the largest character area in the House Unit comprises most of the flat and level lands and straddles both sides of the densely vegetated Franklin Creek. Rows of fruit trees and grape vines are spread out on the west and east sides of the creek and around the north and east sides of the knoll. The geometric layout of the plants contrasts with the plantings of trees, shrubs, and flowers at the Martinez Adobe and especially at the Muir House and knoll. The agricultural area also includes the fish pond space, the reconstructed Franklin Creek windmill and well, the Alhambra well, and the main farm road. Post-Muir features include picnic tables and a grill, storage areas, an adobe brick-making pit, a beehive, and several two-track gravel farm roads. The riparian plantings along Franklin Creek and the non-agricultural plantings along the boundary fences are also part of this character area (except for the west boundary).

Visitor Center area (VC)

This area occupies the northeast corner of the House Unit and corresponds with the Development Zone in the 1991 "General Management Plan/Environmental Assessment." It abuts Alhambra Avenue and serves as the primary access point for visitors. In addition to the Visitor Center, this character area includes a fenced parking lot for seventeen automobiles and one bus, a patio area with benches, and a small grass seating area and gathering space. Other features include sidewalks, the main park sign, an exit turnstile and service gate, a city bus stop, and a variety of non-historic trees and shrubs that are primarily intended to screen the area from the Muir House.

Gravesite Unit area (GR)

The Gravesite Unit features several massive specimen trees, a remnant pear orchard, and riparian vegetation, which together silently stand watch over the tiny fenced cemetery that includes the graves of John Muir, his wife, and other family members.

Mt. Wanda Unit area (WA)

This character area encompasses most of the park's acreage and features a mosaic of rolling hills, woodlands, and grasslands that overlook the Alhambra Valley.

CHARACTERISTICS AND FEATURES

Landscape characteristics describe the tangible and intangible characteristics of a landscape that individually and collectively give it character and aid in understanding its cultural value. For John Muir NHS, they include natural systems and features, land use, circulation, topography, vegetation, buildings and structures, views and vistas, and small- scale features. Landscape features are components of landscape characteristics and represent the smallest unit of study in the analysis process. Both were evaluated in Chapter 8 of Volume 1: Site History, Existing Conditions, and Analysis according to the definitions shown in Table o.1.

Treatment tasks are summarized in four fold- out drawings: Drawing 2.1a (House Unit – Circulation, Buildings and Structures, and Small- scale Features), Drawing 2.1b (House Unit –Vegetation), Drawing 2.2 (Gravesite Unit), and Drawing 2.3 (Mt. Wanda Unit).

Table o.i: Definitions of Contributing and Non- contributing Characteristics and Features

	Definition	For vegetation features:	Examples
Contributing	<p>Landscape characteristics, sites, or features that survive from the historic period and are associated with John Muir, or the agriculture, conservation, or landscape architecture themes. Landscape features are further described as follows:</p> <ul style="list-style-type: none"> - “<i>Character- defining</i>” features that add in a prominent manner to the historical associations and qualities for which the property is significant. - “<i>Characteristic</i>” features that are typical of those extant during the historic period. 	<p>Vegetation material that does not date to the period of significance is considered “contributing” if the <i>Secretary of the Interior Standards</i> were applied in their replacement and the following conditions were met:</p> <ul style="list-style-type: none"> - <i>Condition 1:</i> That the same species and variety is used. If possible, the plant should be either a clone of historically- used vegetation from the site, or, is known to be consistent with the plant material used from that time period. This should to be investigated on a case- by- case basis since certain cultivars have been modified over time. - <i>Condition 2:</i> That the vegetation will be planted in a known historic location and is planted in the same layout (e.g. same site and spacing) as the historic location for that particularly species to have been grown during the period of significance. - <i>Condition 3:</i> That the plant's form is being managed in a way consistent with its historic use (e.g. orchard trees are trained and pruned in a manner consistent with the way fruit trees were grown during the historic period.) 	<p>Muir House; pear orchard at the gravesite; giant sequoia; black locust trees along Woodshed Road.</p>
Non- contributing – Compatible	<p>Landscape characteristics, sites, or features introduced in the landscape after 1914, or have been so altered that they have lost their historic or intended character. Speculative reconstructed features that were intended to evoke the historic period and relate to historic materials, size, scale, proportion, and massing fall into this category.</p>	<p>Vegetation material that does not date to the period of significance and is not contributing is considered “non- contributing – compatible” if it meets a minimum of the first two conditions:</p> <ul style="list-style-type: none"> - <i>Condition 4:</i> That the same species and variety is used. If possible, the plant should be either a clone of historically- used vegetation from the site, or, is known to be consistent with the plant material used from that time period. - <i>Condition 5:</i> That the vegetation will be planted in the same general location and manner as the original species known to have been grown during the period of significance (exact locations unknown) - <i>Condition 6 (Desirable but not required):</i> That the plant's form is being managed in a way consistent with its historic use (e.g. orchard trees are trained and pruned in a manner consistent with the way fruit trees were grown during the historic period). 	<p>Franklin Creek windmill; west, middle, and east orchards.</p>
Non- contributing – Incompatible	<p>Characteristics or features installed or introduced on the landscape after 1914, have no historic precedent, and/ or are inaccurate reconstructions and/ or detract from the site’s historic character in terms of materials, size, scale, proportion, and massing.</p>		<p>Ramada; herb garden; orchard in the fish pond space; boundary plantings</p>
Undetermined	<p>Characteristics or features for which physical evidence or historical documentation is inconclusive or where further research and evaluation are needed.</p>		<p>Earthen dams and stock ponds, olive orchard at Mt. Wanda</p>

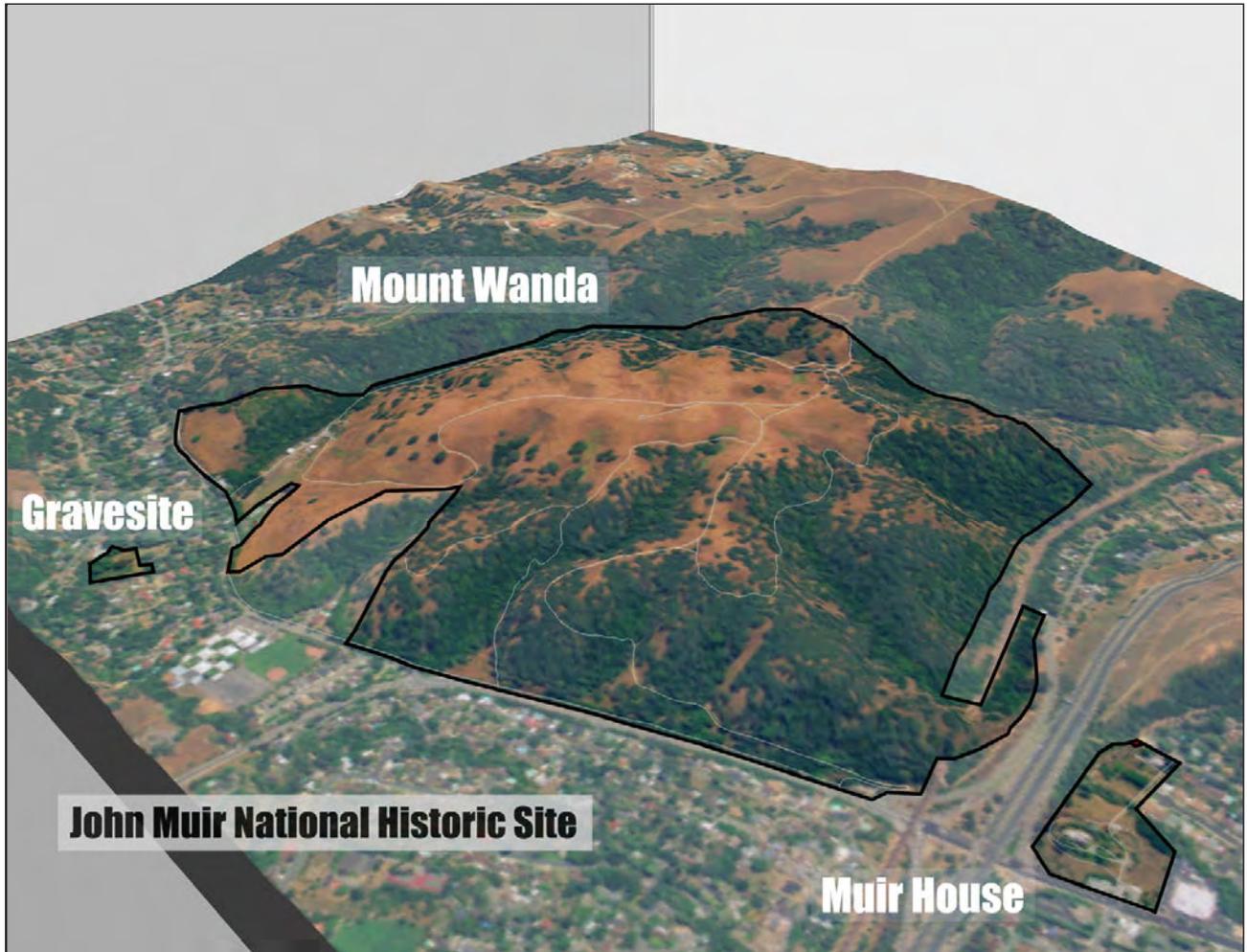


Figure 0.1: Three-dimensional topographic map showing the three units of the park. (John Muir National Historic Site - hereafter JOMU - geographic information system. Adapted by Olmsted Center for Landscape Preservation - hereafter OCLP - 2003).

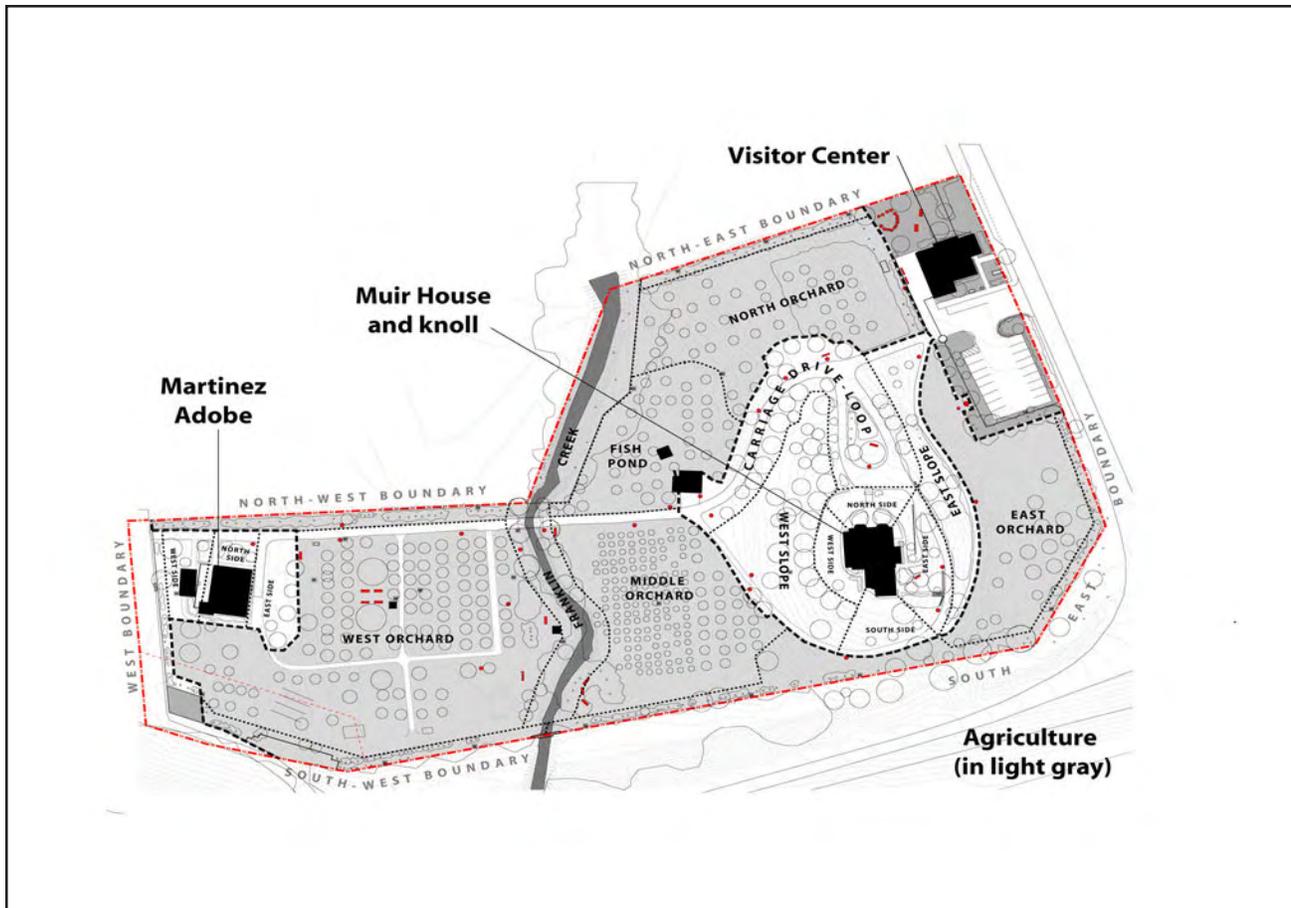


Figure 0.2: Character areas and feature zones at the House Unit. White areas represent the Muir House and knoll and Martinez Adobe areas, light gray indicates agricultural areas, and dark gray represents the Visitor Center area and utility easement. (OCLP, 2003).

CHAPTER 1

TREATMENT PHILOSOPHY AND APPROACH

INTRODUCTION

According to National Park Service (NPS) policy, the Cultural Landscape Report serves as the primary supporting document guiding the treatment of a cultural landscape, and is required before major intervention. This chapter articulates a preservation strategy for long term management of the cultural landscape at John Muir National Historic Site based on its significance, existing conditions, and use. The overall goal is to reinforce the National Park Service's tradition and philosophical basis for sound stewardship of cultural landscapes as outlined in *The Secretary of Interior's Standards for Treatment of Historic Properties* (1996) and *Director's Order 28: Cultural Resources Management Guidelines* (1997).

This chapter includes an overview of the historic character as it existed at the end of the historic period, a summary of management objectives based on planning documents and workshops, and discussions of landscape treatment issues as they relate to historic character, landscape treatment alternatives and the preferred rehabilitation treatment, and landscape rehabilitation goals. Together, these sections provide a foundation for the treatment guidelines and tasks presented in the next chapter.

OVERVIEW OF HISTORIC CHARACTER

The treatment recommendations in the next chapter are intended to support the overall objective of improving the historic character of the landscape at the John Muir NHS. The current National Register documentation states that the period of significance for the park begins in 1800 and ends by 1914. As discussed earlier, the period of significance for the park landscape should be clarified to extend from 1849 to 1914, which recognizes the construction of the Martinez Adobe in 1849 and Muir's death in 1914. Within the proposed period of significance, the period of interpretation spans an even shorter period, from 1890 to 1914, and focuses on the time Muir actually resided in the Muir House. In this twenty- four year span of time, the landscape changed considerably, most noticeably through the growth in vegetation around the house and adobe. While the CLR documents the entire landscape history of the Strentzel- Muir Ranch, the desired historic character is its appearance at or near the end of the historic period (1914). This will accommodate the accretion and change in vegetation.

The park's landscape was created on the gently sloping floor and steep hillsides of the Alhambra Valley. Over the course of the period of significance (1849- 1914), the character of the landscape changed dramatically as the fertile valley lands were molded into a patchwork of orchards, vineyards, and pastures stitched together by farm roads, fence lines, and tree-lined creeks. The Strentzel- Muir fruit ranch operation was one of the most successful in the valley and at its peak in the mid- 1880s covered some 2300 acres of land. Much of this scene has since been lost to suburban development, but the landscape within the park gestures to this agriculturally- dominated period. The two most important buildings at the ranch, the Martinez Adobe and the Muir House, still survive as do the some of the roads, paths, and orchard and vineyard spaces around them. Within sight of this area are the undeveloped lands of Mt. Wanda where Muir often walked, and a little further up the valley is his gravesite nestled between a creek and a pear orchard he owned and managed.

The ranch featured many experimental varieties of fruit under the direction of Dr. John Strentzel, Muir's father- in- law, until the 1880s when he retired. Muir became ranch manager and began to focus on the crops that were the most productive and commercially viable, such as Tokay grapes and Bartlett pears. This shift in operations was soon followed by his retirement from daily management duties in the early 1890s and the gradual selling and leasing of ranch lands. At the time of Muir's death in 1914, the lands that today comprise the park were still in the family: those around the house, adobe, and gravesite were filled with fruits and vines while the grasslands and woodlands on Mt. Wanda were untouched save for occasional grazing activities.

The events at the Strentzel- Muir Ranch were indicative of the orcharding business in the early twentieth century which had been transformed by new scientific techniques that guided the layout of orchards and the form and shape of fruit trees. In the nineteenth century, orchards were characterized by rows of several kinds of fruit with many varieties. The trees typically had tall unbranched trunks of five or more feet in height to allow for planting the ground underneath and were usually unpruned with their form created by browsing livestock and deer.¹ By the twentieth century, orchards featured single variety blocks of one kind of fruit with far less varieties. Tree trunks were "headed low" so that the unbranched portion of the trunk was only about 20- 36" high. This change meant that trees were not tossed and bent by the wind as much and could be pruned, sprayed, and picked more easily and cheaply. The low heading technique also meant grazing livestock in orchards was no longer needed and fences or hedges

were erected to keep deer away. Cover crops like alfalfa, buckwheat, peas, and vetch were used as orchard groundcovers.

The practice of low heading as well as the increased use of tractors, spray rigs, and dusters required modifications in the spacing of trees to accommodate turning radii, particularly in tightly spaced rows like peaches and plums. In general, more maneuverability was manifested between rows rather than within rows. Specifically, spacing for peaches and plums was changed to a rectangular layout of fifteen feet within rows and twenty feet between rows. Apples and pears ranged between a thirty by thirty square to a forty by forty square, citrus trees such as lemons were spaced in a fifteen by fifteen square, and Navel oranges were spaced in a twenty- five by twenty- five square. To make better use of the wider spacing and provide additional income, some farmers planted “filler trees” amongst the “permanent” trees, which formed a quincunx system (an arrangement of five trees in a square or rectangle with one at each corner and one in the center). However, this practice sometimes limited access and retarded the growth of permanent trees if left too long. Most trees were trained to two styles that allowed more sunlight into the interiors: “pyramidal (central leader) style” that featured a distinct central leader with well- spaced horizontal branches and the “open bowl (vase) style” that featured three to five shoots radiating from the trunk. Although historic photographs do not provide detailed views of the trees in the Strentzel- Muir orchards, they do show that some of these techniques were practiced. Additionally, trees were full size rather than semi- dwarf or semi- standard trees.

The character of the carefully maintained orchards contrasted with the swaths of woodlands and grasslands draped over the draws and hilltops of Mt. Wanda. Perhaps more striking, however, was the contrast between the agricultural areas and the many native and exotic plants surrounding the Muir House (and to a lesser degree the Martinez Adobe). Muir once wrote of this scene: “[I hold] dearly cherished memories about...the fine garden grounds full of trees and bushes and flowers that my wife and father- in- law planted – fine things from every land.”² After his wife died in 1905, Muir was often away on travel; during these times, the grounds were meticulously maintained. By the time of his death, the vegetation had grown to create a verdant landscape around the house set amongst sunny open spaces planted with grasses, groundcovers, and/or cover crops. Recollections from Muir’s youngest daughter Helen, along with historic photographs, confirm this scene.

Research of historic photographs and the extant historic layout of spaces suggests the influence of the Victorian- era Gardenesque and Sub- Tropical movements. The Gardenesque movement promoted masses of plants set out in places visible from winding paths and drives, and the views of the house from the curving carriage drive- loop fit into this concept. The Sub- Tropical movement favored the use of palms and other interesting species, and this is illustrated in the presence of Canary Island date palms, Mexican fan palms, and California fan palms, true cedars, and eucalyptus. No planting plan has been found, so it is not clear exactly how much influence these movements had – the row of incense cedars on the west side, for example, was probably planted as much as a defense against the sun, wind, and dust as it was for ornamental purposes or to separate spaces.

The contrasts between these different types of vegetation would have been quite apparent from the main farm road, the primary lane that served as an organizing spine connecting the Muir House to the Martinez Adobe and Franklin Canyon Road. This road also connected to the carriage drive- loop and the Woodshed Road, which traversed the sides of the knoll and together formed a navigable route around the house. At this time the roads featured earthen and gravel surfaces. Depending on the season and the degree of use, some appeared as two track lanes – historic photographs show the Woodshed Road was a two- track road – while the main farm road was well- used and generally lacked a center strip of vegetation. The top of the loop connected to a network of concrete/aggregate steps and walkways that mimicked the footprint of the Muir House.

Historic photographs from the mid- 1880s reveal that a view between the Muir House and the Martinez Adobe was possible due to the relatively low heights of young plantings on the west side of the knoll and riparian vegetation along Franklin Creek. By 1914, the vegetation along the creek north of the main farm had grown considerably, but the height of vegetation on the south side of the road still allowed for views between the buildings. Views toward and away from the Muir House also changed over time; when it was constructed in 1882, the grand building rose impressively from the top of the knoll. Over the next thirty- four years, vegetation planted in those early years became established and more plants were continually added. Although this softened its presence, the house on the hill continued to visually dominate in this agricultural setting. The most dramatic views, of course, were from the hillsides and the hilltops of Mt. Wanda to the south, which rose above the ranch lands, AT&SF trestle, and Alhambra Valley below and looked out to the town of Martinez, Straits of Carquinez, Mt.

Diablo, and on clear days, the Sierra range. In Muir's words, views from the top were "delightful in color like a fairyland."³

Tucked away farther up the Alhambra Valley was the family cemetery, situated alongside a pear orchard and the Arroyo del Hambre. Dr. Strentzel was buried there in 1890, and was joined by Mrs. Strentzel in 1897, Louie Strentzel Muir (Muir's wife) in 1905, and John Muir in 1914. This quiet setting was shaded by riparian plants that included willow and elderberry, several tall eucalyptus and incense cedar trees, and some Cherokee roses planted by Muir along with other shrubs and flowers. The orchard was still producing pears at this time but apparently was not regularly maintained.

Currently, the historic landscape of the John Muir NHS is recognizable, although the growth of both historic and non-historic vegetation has obscured some of the views. Historic orchard spaces and key buildings remain, and the reconstructed Carriage House, Franklin Creek Bridge and Franklin Creek Windmill evoke the historic character. Historic roads and paths remain in good condition and for the most part follow their historic alignments, although surfaces of some have been changed. New structures and landscape features including the Visitor Center, parking lot, signs, accessible paths and access roads, and boundary fences can be modified to improve the site's historic character. The former agricultural landscape that once dominated this area has been replaced by a suburban landscape of houses, businesses, and roads and cannot be recaptured. The park's landscape, however, can at least provide a glimpse of this past time.

MANAGEMENT OBJECTIVES FOR THE LANDSCAPE

The original portion of the John Muir NHS, the 8.9-acre House Unit, was authorized and established under Public Land Law 88-547 on August 31, 1964 as a "public national memorial to John Muir in recognition of his efforts as a conservationist and a crusader for national parks and reservations."⁴ The park's first planning document, the 1965 "Master Plan for Preservation and Use," expanded on the recommendations of a 1963 "Feasibility Report" and offered a broad overview of the new park and its existing and potential resources. Basic management and interpretive strategies were aimed at conveying the spirit and setting during Muir's time. Specific recommendations regarding structures, furnishings, and especially the landscape were purposely deferred to future studies and plans. The plan recognized the difficulty in recreating the exact landscape scene as it existed during Muir's time, and recommended creating a

comprehensive landscape plan in the future based on historical research. However, at this time it called for restoration of orchards, vineyards, flower beds, and gardens and removal of some “non- historic” plantings.⁵

In 1975 and 1976, three documents – “Environmental Assessment,” “General Management Plan (GMP),” and “Interpretive Prospectus” – were developed to update the park’s management and interpretive goals and objectives. The GMP proposed several measures to enable the site to better reflect its general appearance during Muir’s residency, including changes to the Muir House and using the Martinez Adobe for interpretive purposes. Orchards, vineyards, and plantings at the park were viewed as contributing to the historic scene and speaking indirectly of Muir’s involvement in commercial orchards and vineyards and his interest in native plants.

On October 31, 1988, Public Law 100- 563 authorized expansion of the park’s boundaries with the additions of land on Mt. Wanda and at the Muir gravesite (approximately 330 and 1.3 acres, respectively). As noted in the Introduction, the 1991 “General Management Plan/Environmental Assessment (GMP/EA)” focused primarily on incorporating the Mt. Wanda and Gravesite resources into the park’s planning objectives. The GMP/EA noted the impact of the new lands on the cultural resources and visual qualities at the House Unit would be beneficial since it would result in protection of an important aspect of the site’s historic scene to the south (Mt. Wanda).⁶

The House Unit was listed as a National Historic Landmark (NHL) on December 29, 1962. The designation was based on two themes explored in the National Survey of Historic Sites and Buildings: “Theme XIX: The Conservation of Natural Resources” and “Theme XX: Literature, Drama, and Music.”⁷ The site was listed in the National Register of Historic Places on October 15, 1966. The designation was updated in an Inventory- Nomination Form prepared by Laura E. Soulliere on October 10, 1975 and entered on May 22, 1978 (NR #66000083) under Criterion A, B, and C.

MANAGEMENT PHILOSOPHY AND TREATMENT ISSUES

The overarching goal of past and present park management has been to interpret to the public the site’s historic scene as it would have appeared during Muir’s time at the fruit ranch. The research, documentation, and evaluations presented in this CLR have made possible a comprehensive understanding of this complex setting and an articulation of the site’s historic character. Since Muir’s death in

1914, however, over ninety years of landscape change has challenged the park's ability to manage the historic scene and convey its character. The paragraphs below summarize the major landscape- related issues facing the park today, some of which were born years ago and have worsened over time, while others are more recent. They are derived from a treatment charette held at the park in July 2003, the GMP/EA, on- site field work, and from consultation with project participants.

BALANCING ACCURACY VERSUS REPRESENTATION

In 1964, in advance of suburban development, the Muir House, Martinez Adobe, and nine acres of the former 2300- acre Strentzel- Muir Ranch were acquired. Fifty years had passed since John Muir's death, and the cultural landscape within this area had changed considerably. As discussed in Volume 1, Chapter 5 of the CLR, the NPS began implementing plans to return the buildings and grounds to their appearances during Muir's time. Most efforts were focused on restoring the Muir House and Martinez Adobe, planting representative orchards and vineyards, and developing visitor and park support facilities.

Documentation of the site history and analysis of landscape significance and integrity has improved our understanding of not only the original nine acre core but of the larger fruit ranch and its place in the Alhambra Valley. The park's National Historic Landmark status supports the goal of accuracy, and in some areas of the park an accurate historic character can be presented because resources that were extant during the historic period are still present and have integrity. In many other areas, however, the park will need to rely on available documentation from historic photographs and records to convey a historic character that is authentic but may not be completely accurate. The treatment recommendations will consider these differences in available documentation while aiming to convey to the visiting public a true sense of what this place looked like when Muir lived here.

LOSS OF HISTORIC CHARACTER

At the end of the historic period, the Muir House was situated amongst a Victorian- inspired landscape of mass plantings, exotic specimens, gardens, and open spaces. This verdant setting was more wild and overgrown compared to the surrounding well- maintained rows of grape vines and fruit trees that extended toward Franklin Creek and the Martinez Adobe and beyond to the flat lands and lower slopes of the Alhambra Valley. These two distinct landscapes were linked together by earthen farm roads, carriage drives, and fencelines connecting to other farm- related outbuildings and structures.

Ninety years later, portions of these two scenes are embraced within the John Muir NHS. In that time span various aspects of land use, vegetation, views, and circulation have changed within the park's boundaries and especially around it. Some of these changes have diminished the park's historic character, and while not all of them can be reversed – such as the presence of the surrounding suburban landscape off site – others within the park can. Historic vegetation has been lost and non- historic plantings have been added or allowed to grow, which has diminished the sense of expansiveness between the Muir House and the Martinez Adobe. Although mowed lawn areas, trimmed plantings around the house and adobe, and paved farm roads and carriage drives have created a pleasant park- like setting, they have diminished the site's rural characteristics. Together, these changes have combined to blur the distinction between the Victorian setting of the Muir House that represents John Muir as a naturalist and wilderness advocate and writer and the surrounding agricultural areas that represents John Muir as an agriculturalist and businessman. The treatment recommendations offer prescriptions that improve upon and recover the historic character.

OVERGROWN VEGETATION ALONG FRANKLIN CREEK

At the end of the historic period, vegetation along Franklin Creek south of the main farm road was low enough to provide views between the Muir House and the Martinez Adobe and the intervening orchards and vineyards. This visual and spatial connection is historically important, but currently it is blocked by tall and dense masses of riparian vegetation. Recommendations regarding this connection seek to articulate the desired character of this area and inform future studies that will select plants species appropriate in this urban setting.

STRAINED PHYSICAL AND VISUAL RELATIONSHIPS TO SURROUNDING LANDS

The House Unit is hemmed in by a suburban landscape of commercial and residential areas and a major state highway. Soon after the park was established in 1964, fences were erected to delineate the boundaries and control access, and along with new plantings along the fences, to screen outside views. Some of these plantings have achieved this goal, and have matured to a point where they are out of scale with the rest of the landscape. Some plants also shade portions of the orchards and vineyards and block important views of the Alhambra Valley landscape as it exists today. The practice of planting vegetation – primarily coast live oak, coast redwood, and incense cedars – along the boundary fences continues, and those that are allowed to mature will eventually cause the same problems and will likely be controversial.

The surrounding lands have dramatically changed, and physically represent an important chapter of the Strentzel- Muir Ranch story that began during the latter part of the historic period when Muir sold and leased many of its parcels.

Although clear views of the boundary fences are not necessarily desirable, the fences should nonetheless read as the contemporary (and necessary) features that they are. Instead, the fences are screened by these non- historic plantings, which unfortunately appear to be part of the historic scene. The treatment plan offers recommendations that consider the design of the fence structures, identifies areas where boundary plantings are needed as screens or to control views, and determines which kinds of plants are appropriate.

IMPROVING THE VISITOR IMPRESSION AND UNDERSTANDING OF THE PARK'S HISTORIC RESOURCES

The relationship between the historic zone and the development zone at the House Unit is critical and will play a major role in the siting and construction of the new Education and Visitor Center set to commence in the next five to seven years. The building will be comprised of several structures meant to resemble the outbuildings of a typical fruit ranch. The project will also affect the configuration and size of the adjacent visitor parking lot. The treatment plan recommends a planting palette appropriate for the building and parking lot that is compatible with the rural character. As important is the viewshed between the new building and the Muir House, which is currently blocked by both contributing and non-contributing vegetation.

Presently, it is difficult to differentiate between some of the historic and non-historic roads because of their current surface treatments. Benches and interpretive signs as well as contemporary features (trash cans and security lights) are found randomly along these routes and need to be better coordinated in their location, design, scale, and materials.

PROVIDING ACCESS AND PROTECTING RESOURCES

The route of the visiting public and maintenance staff into the House Unit's historic zone has been an issue. Alternatives associated with the new Education and Visitor Center propose extending the visitor parking lot southward into the east orchard, while plans for construction of a second parking lot in the City Tract near the Maintenance Building and paving the tunnel under State Route 4 will attract more visitors and maintenance vehicles to the west side of the unit. The treatment plan evaluates these projects and offers recommendations that balance park needs while preserving the historic character and maintaining visitor safety. It also considers visitor and emergency vehicle circulation between

the current visitor center/parking lot and the Muir House, and between the Canyon Way/tunnel area and the Martinez Adobe/west orchard space.

GRAVESITE UNIT

Although the Gravesite Unit is the least visited part of the park, the resources within the parcel offer some of the strongest links to John Muir and Dr. John Strentzel. One of the most important issues concerns the condition and character of the historic pear orchard, which includes root stock dating to the time of Dr. Strentzel. Other issues include stabilization of the grave markers, granite enclosure, and the banks of the Arroyo del Hambre; access and parking along Strentzel Lane; location and demarcation of the unit's boundaries; and which adjacent land uses should be screened with new plantings.

MT. WANDA UNIT

The treatment plan provides broad recommendations for the management of cultural resources at Mt. Wanda. Several issues are considered: treatment and interpretation of the remnant apricot, olive, and walnut orchards; preservation of the mosaic pattern of grasslands and woodlands through vegetation and fire management strategies; continuation of passive recreational uses; and consideration of potential uses for the Strain Ranch complex when the park acquires the property in the future.

IDENTIFY PRIORITIES FOR PHASING TREATMENT WORK

The park will ultimately determine the priorities for landscape treatment work based on site conditions, interpretive goals, cost, environmental permitting, programmatic needs, and other factors. However, the treatment plan recommends strategies for phasing certain priority projects in order to achieve particular cultural resource objectives.

Although this CLR has focused on the resources within the House Unit, the highest priority should be to ensure that all historic plant materials at all of the units are stabilized and that replacement strategies are in place should anything be at risk for loss. In particular, stabilization and maintenance of the relatively intact historic pear orchard at the Gravesite Unit and the deteriorated apricot orchard at Mt. Wanda, both unique resources at this site, should be a top priority.

TREATMENT ALTERNATIVES

The Secretary of Interior has specified standards, policies, and guidelines for four distinct, but interrelated, approaches to the treatment of historic properties:

preservation, rehabilitation, restoration, and reconstruction. Collectively, they form the philosophical foundation to achieve long term preservation of a landscape's historic features, qualities, and materials. In general, the amount of physical intervention in a landscape increases from preservation to reconstruction.⁸

PRESERVATION

Preservation attempts to maintain a landscape in its present condition. The primary goal is retention of the landscape's existing form, features, and materials. Actions may be as simple as basic maintenance of materials to preparation of a cultural landscape report. In this treatment, protection, maintenance, and repair are emphasized while replacement is minimized.⁹

REHABILITATION

Rehabilitation recommends some changes to allow for contemporary uses while retaining the landscape's historic character. A cultural landscape's character-defining features and materials are protected and maintained as they are in Preservation, but a determination is made prior to work that a greater amount of historic fabric has become damaged or deteriorated over time and replacement and repair will be required. The standards allow for the replacement of extensively deteriorated, damaged, or missing features using either traditional or substitute materials. Only this treatment includes an opportunity to make possible an efficient contemporary use through alterations and additions.

RESTORATION

Restoration depicts a landscape at a particular time in its history and often involves removal of non-historic features and reconstruction of missing features. Rather than maintaining and preserving a landscape as it has evolved over time, the goal of Restoration is to make the landscape appear as it did at a particular and most significant time in its history. Restoration can involve the removal of features from other periods and missing features can be replaced based on documentary and physical evidence using traditional or compatible substitute materials.

RECONSTRUCTION

Reconstruction replicates a non-surviving landscape through new construction. Whereas Restoration provides guidance on restoring or recreating features, this treatment addresses aspects that recreate an entire non-surviving landscape with new material. Like restoration, the goal is to make the landscape as it appeared at a significant time in history. The difference is that there is little, if any, historic

material left to start with. Reconstruction is only possible if sound physical evidence is available.

REHABILITATION AS THE RECOMMENDED TREATMENT

Of the four treatment philosophies – preservation, rehabilitation, reconstruction, and preservation – rehabilitation will best allow for contemporary uses for the property through repairs, alterations, and additions while preserving those existing historic features that convey historical, cultural, and architectural values. The rehabilitation treatment also acknowledges the reality that some areas of the park are better documented through available historic photographs and records than are other areas, and as such the accuracy of the historic scene presented to the public will necessarily vary throughout the park. Actions associated with the preservation treatment approach would retain and protect the extant historic resources but would do little to improve and enhance the historic character. In a restoration approach, the historic character would be greatly improved because of its focus on the period of significance, but it would not necessarily favor features, changes, and conditions from other periods, including contemporary additions. A reconstruction approach is unnecessary as much of the historic fabric still remains and is also problematic because the stringent documentation required prior to beginning work is not available.

Based on the recommendations of the GMP/EA and a landscape treatment workshop held at the park in July 2003, the primary treatment for the John Muir NHS is rehabilitation. While the GMP/EA does not specifically call out rehabilitation, a site- wide rehabilitation approach is inferred as the primary treatment:

- Retain all existing historic plantings (those prior to 1915);
- Representative orchards and vineyards will be maintained, and special protection should be given to trees planted by Muir or Strentzel; and
- The grounds will aid in re- creating the historic scene and will speak indirectly of Muir's involvement in commercial orchards and vineyards as well as his interest in native plants.

The narrative guidelines in the next chapter recommend actions consistent with *Director's Order 28* and the standards for rehabilitation in *The Secretary of Interior's Standards* (Appendix 1). The guidelines address immediate needs to improve site conditions and meet the park's interpretive objectives. This

treatment approach will be a long term strategy and will be phased over time, and should be applied universally to all resources in the project area. Rehabilitation as a treatment includes elements of preservation, replacement of missing historic features, and limited construction of new compatible features necessary to meet contemporary needs. As a result, the specific actions associated with individual landscape features vary depending on functional objectives or condition.

GOALS OF LANDSCAPE REHABILITATION

Rehabilitation acknowledges the need to meet continuing or changing uses through alterations or new additions while retaining the property's historic character. It allows for repairs or alterations of the cultural landscape, and for improving the utility and function of landscape features. It is used to make an efficient, compatible use while preserving those portions or features of the site that contribute to its historical significance.¹⁰ The treatment guidelines and tasks in the next chapter are directly tied to the rehabilitation goals described in the *Secretary of the Interior's Standards*.¹¹ How they apply to the landscape at the John Muir NHS is as follows:

IDENTIFY, RETAIN, AND PRESERVE HISTORIC FEATURES AND MATERIALS

Like the preservation treatment, the rehabilitation treatment begins with recommendations that identify important landscape characteristics, features, and materials that are important to the landscape's historic character and must be retained.

At John Muir NHS:

Treatment guidelines and tasks include retaining and preserving: the historic agricultural and domestic land uses; topographic features such as the knoll and fish pond space; dating historic plant material through coring and replacement through propagation; the network of farm lanes, carriage drives, and walkways; the relationships between buildings, structures, and the landscape.

PROTECT AND MAINTAIN HISTORIC FEATURES AND MATERIALS

After identifying the important features and materials that should be retained, protecting and maintaining them is the next step. Protection can be accomplished through temporary or permanent measures. Maintenance includes daily, seasonal, and cyclical tasks and the non-destructive techniques, methods, and materials used to implement them.

At John Muir NHS:

Treatment guidelines and tasks include protecting and maintaining: topographic features such as the knoll and fish pond space; historic plant material through appropriate historic pruning techniques and practices; materials that comprise the Muir House, Martinez Adobe, Carriage House, and Franklin Creek Windmill.

REPAIR HISTORIC FEATURES AND MATERIALS

When existing conditions of character- defining materials and portions of features warrant additional work, repair by use of non- destructive methods is recommended. Repair work begins with the least degree of intervention possible. It also includes the limited replacement in kind of extensively deteriorated materials or parts of features, or replacement in kind of materials or parts of features lost due to seasonal change. Using the material which matches the historic in design, color, and texture is preferred, although substitute material is acceptable if it conveys the same visual appearance as the historic period.

At John Muir NHS:

Treatment guidelines and tasks include repairing: structures or vegetation that comprise spaces and patterns in the landscape; deteriorated topographic features such as the fish pond space; historic vegetation through corrective pruning and grafting onto historic genetic root stock; surface treatment, materials, and edges of farm roads, carriage drives, and walkways.

REPLACE DETERIORATED HISTORIC MATERIALS AND FEATURES

Following repair in the hierarchy is replacement of an entire character- defining feature with new material because the level of deterioration or damage is beyond repair. Like repair, the preferred option is to replace the entire feature in kind, but the use of compatible substitute materials can be considered if warranted by technical, environmental, or feasibility issues. However, the removal and replacement of an entire feature is only recommended if repair is not possible.

At John Muir NHS:

Treatment guidelines and tasks include replacing: an entire feature in kind that defined land use patterns that is too deteriorated to repair, such as an orchard; deteriorated or declining vegetation features such as the incense cedars west of the Muir House; deteriorated circulation features, such as the paved main farm road; a deteriorated structure, such as the foundation of the Bunkhouse/Ranch foreman's house.

DESIGN FOR THE REPLACEMENT OF MISSING FEATURES

When an entire feature is missing, the landscape's historic character is diminished. The first or preferred course of action is to replace the missing feature if adequate pictorial, historical, or physical documentation is available and it is desirable to reestablish the feature as part of the historical appearance. A second course of action involves a new design that is compatible with the remaining character- defining features of the historic landscape, but is clearly differentiated from them so as not to create a false historical appearance.

At John Muir NHS:

Treatment guidelines and tasks include designing and installing: new vegetation features when the historic feature is completely missing, such as the Monterey pine northeast of the Muir House; new circulation features when the historic feature is missing, such as the lost portion of the triangle intersection; new structures when the historic feature is missing, such as the Alhambra windmill.

ALTERATIONS/ADDITIONS FOR THE NEW USE

When alterations are needed to assure its continued use, such alterations should not radically change, obscure, or destroy character- defining characteristics, features, and materials. Such work may involve the removal of features that detract from the overall historic character. New additions should be avoided if at all possible, however, and considered only if those needs cannot be met by altering non- character- defining features. After this review, if the new addition is the only viable alternative, it should be planned, designed, and installed to be clearly differentiated from the character- defining features.

At John Muir NHS:

Treatment guidelines and tasks include: removing non- significant features that detract from historic land use patterns, such as boundary fence plantings; adding designated parking spaces at the Gravesite Unit to improve circulation; designing and constructing the new Education and Visitor Center, which will replace the current inadequate facility and will evoke the appearance of farm outbuildings.

ENDNOTES FOR CHAPTER ONE

¹ Susan Dolan, "A Fruitful Legacy: The Historic Context of Fruit Trees and Orchards in the National Park System." Olmsted Center for Landscape Preservation, Columbia Cascades Support Office, and National Center for Cultural Resources Stewardships and Partnerships. Draft, March 2001: 64- 65 (Cites Auchter 29:210).

² William Frederic Bade, *The Life and Letters of John Muir, Volume 2*. Boston, MA: Houghton Mifflin Company, 1924. (Cited in Steve M. Burke, Diane L. Rhodes, Kevin

L. Baumgard, Mark L. Tabor, and Charles R. Svoboda, "Historic Structures Report, Martinez Adobe, John Muir National Historic Site." Denver, CO: US Department of Interior, National Park Service, Denver Service Center, August 1992: 375.

³ National Park Service, "General Management Plan and Environmental Assessment." Denver, CO: US Department of Interior, National Park Service, Western Regional Office, January 1991: 37.

⁴ Section 2, Public Law 88- 547, 31 August 1964. From National Park Service, "General Management Plan and Environmental Assessment," 1991: Appendix 1.

⁵ National Park Service, "Master Plan for Preservation and Use, John Muir National Historic Site, Contra Costa County, California." San Francisco, CA: US Department of Interior, National Park Service, Western Regional Office, Division of Landscape Architecture, Design and Construction, 1965: 6.

⁶ National Park Service, "General Management Plan and Environmental Assessment," 1991: 47.

⁷ John Hussey, Ronald N. Mortimore, Charles S. Pope, Lewis Koue, and John Wosky, "Feasibility Report, John Muir Home and Vicente Martinez Adobe." San Francisco, CA: US Department of Interior, National Park Service, Western Regional Office, March 1963: 6.

⁸ Robert Page, Cathy Gilbert, and Susan Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Washington D.C: US Department of Interior, National Park Service, Cultural Resource and Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998: 82. National Park Service, *The Secretary of Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Treatment of Historic Landscapes*. Washington DC: US Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative, 1996: 20, 50, 92, 130.

⁹ National Park Service, *The Secretary of Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Treatment of Historic Landscapes*. Washington DC: US Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative, 1996: 20, 50, 92, 130.

¹⁰ Modified slightly from the official definition of rehabilitation, by adding "cultural landscape." See also Appendix 1.

¹¹ National Park Service, *The Secretary of Interior's Guidelines for the Treatment of Historic Properties*, 1996: 50- 54.

CHAPTER 2

NARRATIVE TREATMENT GUIDELINES AND TASKS

INTRODUCTION

The treatment recommendations presented in this chapter are intended to guide the rehabilitation of the John Muir NHS landscape. These principles and tasks apply the rehabilitation treatment philosophy and approach discussed in Chapter 1 to landscape characteristics throughout the park and to specific areas and features. They are intended to provide a philosophical basis for sound stewardship of the park's landscape that, if accomplished, would both improve the condition of the park landscape and enhance its historic character. They also address issues and considerations related to interpretation, access, and safety.

As the primary treatment at the John Muir NHS, rehabilitation allows for compatible alterations and additions to the landscape for contemporary needs. However within the umbrella of rehabilitation, certain preservation, restoration, and reconstruction activities can occur. For example, under rehabilitation, historic vegetation features are preserved, maintained, repaired, replaced if deteriorated, replaced if missing, or compatibly altered for new use.

TREATMENT METHODOLOGY

The narrative treatment principles are presented first as a set of guidelines for landscape characteristics – natural systems and features, land use, circulation, topography, vegetation, buildings and structures, views, and small- scale features – that apply to the park's entire landscape. They are followed by treatment recommendations for specific landscape features that require treatment other than straightforward preservation maintenance.

The feature level tasks are presented in six sections that correspond to the four character areas in the House Unit – Muir House and knoll, Agriculture, Martinez Adobe, and Visitor Center – as well as the Gravesite Unit and Mt. Wanda Unit character areas. Following these sections are recommendations for small- scale features for the entire park. Each character area section begins with a brief summary of the historic character as it existed in c.1914 and is followed by specific tasks and recommendations organized by their appropriate landscape characteristic (circulation, vegetation, buildings and structures, and views). Some of the character area sections conclude with actions considered as possible treatment recommendations but not developed because they would have: 1)

unacceptable impacts on the historic character of the John Muir NHS, 2) create a false historical appearance due to insufficient historical and photographic evidence, 3) be non-responsive to contemporary use requirements, or 4) compromise health and safety considerations.

A summary analysis of each feature is included in the recommendations; a more detailed inventory and analysis (historic condition, existing condition, and significance) can be found in Chapter 8 and Appendix 5 of Volume 1: Site History, Existing Conditions, and Analysis. Appendix 4 in Volume 1 contains additional information related to missing historic features. Many of the tasks and recommendations also include an endnote that references *The Secretary of the Interior's Standards* and specifically the rehabilitation goals as well as listings of other projects that may be affected by the proposed task or to projects that the park may wish to consider accomplishing concurrently.

Treatment tasks are summarized in four fold-out drawings: Drawing 2.1a (House Unit – Circulation, Buildings and Structures, and Small-scale Features), Drawing 2.1b (House Unit –Vegetation), Drawing 2.2 (Gravesite Unit), and Drawing 2.3 (Mt. Wanda Unit). Appendix 2 includes supplemental treatment materials, both of which are referenced in the tasks as appropriate.

PARK-WIDE TREATMENT PRINCIPLES FOR LANDSCAPE CHARACTERISTICS

The treatment principles for eight landscape characteristics (natural systems and features, land use, circulation, topography, vegetation, buildings and structures, views, and small-scale features) are summarized below. These principles represent overall treatment recommendations that apply site-wide. Relevant conditions and issues are described, and then, if applicable, guidelines serving as design parameters are provided to ensure future actions are sensitive to the historic character.

NATURAL SYSTEMS AND FEATURES

Natural systems and features, which include geological resources, natural hydrological features, and flora and fauna, contribute to the historic significance of the park as a characteristic of the park's landscape. Geological and hydrological features remain intact from the end of the historic period and illustrate such static features as the landform of Mt. Wanda and the flat floor of the Alhambra Valley, as well as dynamic features such as Franklin Creek and the Arroyo del Hambre. Since the end of the historic period, both creeks have been

altered with culverts, stabilization structures, and check dams.

Recommendations for these features are addressed in the “Buildings and Structures” section that follows. Recommendations for woodland and grassland communities on Mt. Wanda and riparian species along the creeks are presented in the “Vegetation” section.

LAND USE

Land use contributes to the historic significance of the park as a defining landscape characteristic. Although the Muir House and Martinez Adobe are now open to the public rather than private residences, the adjacent agricultural land uses set out around these domestic areas are still intact. Orchards and vineyards still grow on the same lands that were planted historically, although some types of fruit trees are different. Other land uses have changed such as the presence of fruit trees in the fish pond space, development of the Visitor Center and parking lot northeast of the Muir House, and the utility easement south of the Martinez Adobe. Except for the Strain Ranch and the park and ride lot, Mt. Wanda is now devoted to passive land uses much as it was during the historic period. The historic land uses at the gravesite have not changed since the historic period. The most significant land use changes overall, of course, have been in areas surrounding the park which were once planted with orchards and are now built up with homes, businesses, and roads.

Guidelines for land use

- Park areas retaining historic land uses and integrity should be preserved.
- Historic zones delineated in the park’s 1991 “General Management Plan/Environmental Assessment” (GMP/EA) should be honored. Land use changes deemed necessary to meet contemporary needs in these areas should be undertaken only if no other options are available.
- Proposed land use changes should be directed to areas of the park that have diminished historic integrity, areas where the change will not adversely affect the historic scene, or areas where replacement of missing features is not essential to the historic character. Changes or alterations to land uses should be compatible with the historic scene and should be aligned with broader park management goals and objectives.

CIRCULATION

Circulation contributes to the historic significance of the park as a defining landscape characteristic. The existing circulation system consists of roads, lanes,

walkways, and steps including both surviving historic features and new additions. In particular, the historic roads create a frame within which historic land uses were defined, and those such as the main farm road continue to serve as the primary connection between the Muir House and the Martinez Adobe. Most of the system is in good condition, although some alignments have been altered to meet contemporary needs. The most pressing issue is that it is difficult to differentiate between historic and non- historic roads and paths due to the use of contemporary asphalt surfaces which have unified their appearance.

Guidelines for circulation

- Existing historic roads and walkways will be preserved, including work needed to stabilize and repair deteriorated features.
- To the greatest extent possible, the historic alignment and elevations of roads and paths will be retained. Depending on use, the farm roads were either one lane in width or existed as two tracks with a vegetated median. The roads historically had indistinct edges, so the addition of steel edging to contain the roadway should be discouraged.
- The historic farm roads featured earthen and gravel surfaces. To achieve this desired character, historic roads should feature an unbound earthen and gravel appearance with a stabilizer that can withstand wear and tear caused by park maintenance vehicles and storm events. If this is not possible, the park should explore using a bonded aggregate treatment, such as chip seal. Additionally, as new surfacing techniques are regularly introduced and tested in the industry, the park should plan to experiment with these options on site before making a final decision.
- Missing circulation features, such as portions of the triangle intersection and the southeast farm road, may be replaced using historic documentation, archeological investigations, and site evidence as a guide.
- If modifications are necessary to improve accessibility, such improvements should be done in such a way as to minimize changes, using a compatible design vocabulary.
- The surfaces of new roads and paths, and existing non- historic roads and paths, should be differentiated from the surfaces of historic circulation features so that visitors are aware of the difference.
- Existing non- historic roads and paths may be altered to enhance the historic character of the site.

- New paths may be added, such as ramps necessary to meet site accessibility objectives, provided the new feature is compatible with the historic landscape and that existing historic features are not compromised. New circulation features should not be introduced in the historic zones unless there are no other viable alternatives.
- New circulation features and concrete patches on historic features should be date- stamped in a discrete, but visually accessible location (e.g. near scoring joint at the edge) to ensure that they are identified as being non- historic.

TOPOGRAPHY

Natural and modified topographic features contribute to the historic significance of the park as a defining landscape characteristic. The large- scale topography (landform) of the park's three units – from the flat and arable lands at the House and Gravesite units, to the conspicuous knoll and fish pond spaces, to the steeply- sloped lands at Mt. Wanda – remain intact. These topographic conditions played a major role in the development of the Strentzel- Muir Ranch and the siting of the Martinez Adobe and Muir House, and also directed suburban growth in the 1960s. The most significant modification occurred at that time when broad earthen embankments were constructed south of the Muir House for State Route 4, the toe of which became the House Unit's south boundary.

Historic modifications to the topographic conditions – the curving route of the carriage drive- loop and Woodshed Road on the knoll, the small retaining wall east of the Muir House, and the railroad grade and tunnel on Mt. Wanda – can still be seen. Features such as the low berm at the fish pond and the southeast farm road are no longer present. Post- historic changes at the House Unit include the retaining wall and patio at the Martinez Adobe and Visitor Center, construction of the easy access path, and an earthen swale east of the Franklin Creek Bridge. At Mt. Wanda there have been topographic modifications associated with the small stock ponds and dams, and development of the park and ride lot, California State Riding and Hiking Trail, and fire roads.

Guidelines for topography

- Introduction of changes in historic elevation or creation of new major earthforms should be avoided.
- Areas susceptible to development of runnels caused by erosion should be monitored and stabilized, especially along Franklin Creek and the Arroyo del

Hambre as well as on the steeper sections of the carriage drive- loop, Woodshed Road, fire roads, and the California State Riding and Hiking Trail.

VEGETATION

Vegetation contributes to the historic significance of the park as a defining landscape characteristic. The diverse palette of plants dates from the historic period and after and consists of fruit trees, grape vines, specimen trees and shrubs, lawn areas, riparian plantings, grasslands, woodlands, and volunteer vegetation that is both native and introduced species. The agricultural aspects of the Strentzel- Muir Ranch dominated the landscape with rows upon rows of fruit trees and vines filling the floor of the Alhambra Valley and lapping up the lower slopes of Mt. Wanda and the surrounding hills. Contrasting this scene were the sinuous courses of Franklin Creek and the Arroyo del Hambre framed by riparian vegetation, the wooded upper slopes and hilltop grasslands of Mt. Wanda, and the individual and mass plantings of native and exotic trees and shrubs around the Muir House and Martinez Adobe.

The distinction between these areas has become somewhat blurred over time due to both continued growth and loss of historic vegetation, the increasing presence of non- historic vegetation in areas that were not planted, and the introduction of invasive species. As a result, the Muir House no longer visually commands the presence it once held over the ranch and the valley, and the physical relationship between it and the Martinez Adobe is no longer evident to visitors. Although the orchard and vineyard spaces are used in much the same way as they were historically, most of the original plants were removed or have died. Representative orchards have been planted since that time, but the types and styles of some of the trees are in some cases not accurate.

Guidelines for vegetation

Preservation and documentation

- Plant material will be treated to preserve and enhance the site's historic character and ensure that natural communities are protected.
- Replacements of all contributing vegetation should be available when the original plants die or are in hazardous condition. Propagation is needed for historic cultivated variety plants such as contributing orchard trees and some ornamentals. (Specifically, any orchard plant that is propagated should be also be grafted on the appropriate rootstock.) However, if the plant is a native species still found in the region, it can often be obtained from

commercial sources. Plants can also be conserved through living specimens or through germplasm techniques.' The park should consider partnering with another Bay Area national park (such as Golden Gate National Recreation Area), university, or a local historic orchard repository to propagate historic plants.

Maintenance and culture

- Vegetation features evaluated in Chapter 8 of Volume 1 that are composed of multiple woody plants, such as the arced row of incense cedars west of the Muir House, will be managed as one feature. Those plants evaluated as a solitary feature should be managed as such.
- An arborist should be consulted when determining necessary actions for tree pruning or tree removal. Historic and non- historic vegetation that reaches a hazardous condition shall be removed. Soil compaction and disturbance should be minimized during pruning and removal projects.
- To convey the late- nineteenth and early- twentieth century gardenesque and subtropical character of the site, excessive pruning and mowing should be avoided. The use of mulch in planting beds should be limited to areas where sensitive root zones need to be protected. Shrubs should be allowed to grow according to their natural form so long as they do not present a hazard to visitors or structures. Turfgrass areas should be mowed less frequently to reflect this character.
- The use of plant identification signs in the landscape should be discouraged. Such elements were not present during the historic period.

Removal and replacement

- Historic plant material can strongly convey a feeling of age in a landscape, and also provides a tangible link to the past. Change due to natural growth of historic features such as specimen trees is appropriate and reflects the natural dynamics of the landscape, but should be managed where it conflicts with other historic characteristics, such as views and spatial relationships. When the feature is in irreversible decline, poses a significant threat to safety or adjoining historic features, no longer fulfills its historic design intent, or will be destroyed if radical pruning is performed, it should be replaced in kind and managed to a more historically appropriate size and appearance.
- Wherever feasible, non- historic vegetation should be removed if it conflicts with reestablishment of historic character.

- Prior to removal considerations, vegetation evaluated as non- contributing or undetermined should be dated through coring or cross section methods whenever possible. If such tests determine that the plant dates to the historic period, it should be retained and replacements should be available.
- Missing vegetation features will be replaced in kind where feasible. Varieties that can be identified in historic photographs or were used locally during the historic period are preferred; however, if this information cannot be determined or if the variety is no longer available, another variety that matches form and character present during the historic period can be selected. These plants may be cultivated or native species.
- In most cases, existing non- contributing vegetation along the park’s boundary fences should be removed as they will eventually mature to a point where they will be out of scale with the historic scene and will unnecessarily shade historic orchard spaces and screen views out into the Alhambra Valley. The proposed additions of fruit trees towards the boundary fences will in itself partially screen the fences with more historically appropriate vegetation.

Plant palette

- Orchard cover crops typical of the latter part of the historic period included alfalfa, buckwheat, peas, and vetch. These or other species should be considered in the park’s agricultural areas to help reestablish the historic character. Likewise, open spaces in non- agricultural areas, such as on the slopes of the knoll and around the Muir House and Martinez Adobe, were historically planted in groundcovers, cover crops, and/or grasses that were low growing and created an open space character. In general, these areas should be planted in turfgrasses (unless a groundcover is specifically recommended). Choices of plants should be made in consultation with the park’s Orchard Management and Integrated Pest Management plans (see Appendix 2).
- In keeping with early twentieth- century orcharding practices, the number of varieties in the orchards should be few in number. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management and Integrated Pest Management plans. Trees should be full size rather than semi- dwarf or semi- standard, and as they die they should be replaced in kind.

- At the House Unit, the use of invasives is acceptable if historically appropriate. However, at the Mt. Wanda and Gravesite units, invasive species such as ailanthus (tree- of- heaven) and numerous thistles should be actively controlled or removed. Other vegetation management activities may be undertaken to support natural resource objectives.
- The blue oak woodlands and non- native grasslands at Mt. Wanda, which include lesser amounts of mixed evergreen forest, chaparral, ruderal, and orchard types, will be managed as dynamic plant communities following natural resource management principles.

Vegetation on CALTRANS property

- The park has in the past participated in discussions with CALTRANS regarding plantings along State Route 4. This broad area was created in the early 1960s as part of the slopes associated with the four- lane highway and abuts portions of the park's south- east and south- west boundary fences generally between Alhambra Avenue on the east and the California State Riding and Hiking Trail on the west. Recently, a mass planting of new shrubs and trees was installed in the eastern half of this area near the historic Canary Island date palm and the eucalyptus grove. The park should carefully monitor the condition of the historic trees in this area. The western half features steeper slopes and is densely vegetated, but the height of the plants do not currently block the important view of Mt. Wanda to the south. The park should work with CALTRANS to ensure that the trees in this half of the CALTRANS property do not grow tall enough to block this view.
- The park should also enter into an agreement with CALTRANS that ensures the park is notified in advance of any proposed actions in these areas.

BUILDINGS AND STRUCTURES

Buildings and structures contribute to the historic significance of the park as a defining landscape characteristic. Historic buildings and structures include the Muir House, Martinez Adobe, wall and steps east of the house, and the gravemarkers and enclosure at the cemetery. The Carriage House has been reconstructed with some of its original materials in its original location at the fish pond space, and the reconstructed Franklin Creek Bridge and Franklin Creek Windmill and Well are compatible with the historic scene. Since the historic period, other important structures have been lost such as the Woodshed, Alhambra windmill, and Bunkhouse/Ranch foreman's house.

Except for the Visitor Center, most other non- historic structures are more or less inconspicuous in the landscape. At the House Unit, they include low retaining walls, the check dam and creek stabilization structures, and the ramada; at the Gravesite Unit they include the iron picket fence around the cemetery and the bridge abutment. The buildings and structures at the Strain Ranch and the earthen dams and ponds atop Mt. Wanda also blend in with the historic scene.

Guidelines for buildings and structures

- Historic buildings and structures should be retained and preserved, including actions needed to stabilize and repair deteriorated conditions.
- Missing features, such as the Woodshed, may be replaced either as a reconstruction if sufficient documentation is available or as a new design that is compatible with the character of the historic landscape. Archeology should be considered to locate missing features or to reveal important information related to the feature and the historic scene.
- New structures may be added, provided the existing historic features are not compromised and the new feature is compatible in scale, design, and materials with the historic site.
- Non- historic buildings and structures may be altered or removed to enhance the historic character of the site.
- Temporary short- term structures, such as the stage set up next to the giant sequoia, may be installed for limited park- related uses. However, such structures should be assembled just prior to each activity and dismantled immediately after. Care should be taken not to impact historic resources in siting the structure and during assembly and disassembly.

VIEWS AND VISTAS

Views and vistas no longer contribute to the historic significance of the park as a defining landscape characteristic primarily because of the maturation of historic vegetation and the presence of non- historic vegetation features. There are countless viewsheds within the park and looking outward, and all of them provide both historic and contemporary snapshots of what remains of the 2300- acre Strentzel- Muir Ranch. Implementation of many of the recommendations in this CLR will improve and enhance the historic scene, and thus many of these views. The Analysis of Landscape Characteristics section in Chapter 8 of Volume I describes three key views that best illustrate the essence of the ranch scene that, in some cases, has changed considerably since John Muir's time. Today, the

integrity of these views has diminished primarily because of the maturation of historic vegetation and the presence of non- historic vegetation features. Specific tasks and actions are described later in this chapter.

Guidelines for key views and vistas

- The visual relationship between the Muir House and knoll and the Martinez Adobe should be restored. A historic photograph from c.1885 looking west from the Muir House and across the creek toward the Martinez Adobe (Figure 2.1) shows many of the most important orchard spaces, structures, and circulation features at the ranch. Today, tall and dense masses of native and non- native plantings along the creek have combined to sever this relationship and block views between the two buildings and the intervening lands. This wall of vegetation likely discourages some visitors from crossing the creek and exploring the west orchard space and the adobe. Closer to the buildings, the view is also inhibited by numerous non- historic trees on the west slope of the knoll and on the east side of the adobe, as well as two large pecan trees in the west orchard. To restore this important relationship, the height of vegetation along the section of Franklin Creek south of the main farm road should be kept low. Non- historic vegetation on the west slope of the knoll and east side of the Martinez Adobe, and non- contributing trees in the west orchard, should be removed.
- The view to the southwest from the Muir House and knoll to Mt. Wanda should be preserved. A historic photograph taken in the late 1890s looking southwest from the west slope of the knoll (Figure 2.2) shows a great view of the plum trees and grapes in the middle orchard space that give way to the hillside pear orchard and the steep and wooded north slope of Mt. Wanda. This dramatic view of the Alhambra Valley's natural features is still intact today, despite the presence of the broad fill slopes of State Route 4 that cut across the view. A grove of coast redwoods planted in front of the culvert under the highway has now matured to partially block this view and shade the adjacent crop areas. Mass plantings of young coast live oaks, incense cedars, and coast redwoods along the boundary fences will create the same problem in the future. To preserve this important view, the tall coast redwoods in the west and middle orchard spaces should be removed, as should non- historic vegetation along the south- east and south- west boundary fences. The park should also work with CALTRANS to limit the height of vegetation on the fill slopes that rise up beyond the boundary fence, especially along the south- west boundary fence where the elevation of the highway increases.

- The visual relationship between the Muir House and the Visitor Center area should be rehabilitated. A c.1900- 1905 view from Muir House looks northeast from the second floor scribe den (Figure 2.3). The view extended far beyond the ornamental plantings around the carriage drive-loop, reaching across the apple orchard and row of incense cedars on the east slope of the knoll towards hay fields and orchards in the distance. Today, this same view illustrates the dramatic shift from an agricultural landscape to a suburban scene of roads, buildings, and power lines, some of which are located within the park's boundaries. From the vantage of the Visitor Center area, this viewshed also gives visitors their first view of the Muir House atop the knoll. Today, however, both contributing and non-contributing vegetation have diminished this relationship, but can be repaired by replacing the mature and possibly historic California bay in the center island of the carriage drive- loop, removing blue elderberry, a California white oak, and a coast live oak on the east side of the drive, and coast live oak and elm along part of the Visitor Center boundary fence.

SMALL-SCALE FEATURES

Small- scale features no longer contribute to the historic significance of the park as a defining landscape characteristic. With the exception of the horse- drawn sprayer on display next to the Visitor Center, there are no other small- scale features in the park's landscape that date from the historic period. Locations of some of the current boundary fences correspond to historic fencelines of the 1908 Muir Homestead boundaries along the House Unit's north- east and north- west boundaries and part of Franklin Creek and the Visitor Center character areas. Most of other agricultural- and domestic- related features such as fences, cisterns, privies, sheds, storage areas, pens, and clothes lines were removed during both the historic period and afterwards as the ranch lands were subdivided and sold. Livestock structures and fence lines are scattered around the Mt. Wanda Unit, but additional research will need to be planned to determine their significance.

Existing park- related small- scale features include boundary fences, entrance signs and historical markers; interpretive signs, kiosks, and marker posts; benches; picnic tables and a grill; trash receptacles; security lights; and water faucets and hoses. Features such as the beehive oven, beehive, fruit bin, and adobe brick- making pit are more in keeping with the site's history, and even though they do contribute to the site's significance, add detail and interest and are parts of the park's interpretive efforts. Features like the hydrothermograph,

weather station, and radio repeater at Mt. Wanda are not directly tied to the park's operations or interpretive programs.

Guidelines for small-scale features

- Coordinate design and siting of all small- scale features with other site elements to ensure consistency and prevent visual disorder. Interpretive plans should be reviewed and/or revised to determine the need for and location of signs, markers, kiosks, and benches.
- New elements should be designed and located so that they blend into the landscape as much as possible.
- Utilitarian features related to park operations should be kept out of the public eye as much as possible. Those that are necessarily visible should blend in with the historic scene.
- Non- historic furnishings such as picnic tables and grills that generate heavy use and foot traffic should be located in development zones or away from the most sensitive historic spaces and features.

TASKS FOR THE MUIR HOUSE AND KNOLL AREA - (MH)

HISTORIC CHARACTER C.1914

At the end of the historic period, the Muir House was the dominant centerpiece of the Strentzel- Muir Ranch. The imposing Italianate mansion was situated atop the knoll and overlooked acres upon acres of fruit trees, vineyards, and fields that filled the Alhambra Valley. The house and nearby Woodshed were accessed by a network of earthen/gravel carriage drives and farm roads, two- track farm lanes, concrete sidewalks, and paths that roughly bounded spaces filled with exotic and native trees, shrubs, groundcovers, and flowers set out in masses or as prominent specimens. Separating these features were garden areas and open spaces of grass, groundcovers, and cover crops. Inspired by the Gardenesque and Sub- Tropical movements, this late Victorian- period scene was lush and wild compared to the neat and orderly rows of fruit trees and grape vines that surrounded it. The following treatment tasks aim to recover the historic character of the Muir House and knoll character area.

MH: CIRCULATION**Remove asphalt surface on the carriage drive-loop and replace with a surface that reestablishes the historic character.² (Appendix 2)**

The carriage drive- loop contributes to the significance of the park as a character- defining circulation feature of the historic period (1849- 1914). Historic photographs suggest the width of the road was between eight and ten feet during this period along the narrowest sections on the east and west sides of the island, with wider widths at the north and south ends of the loop to accommodate turns (Figures 2.4 and 2.5).

The carriage drive- loop should be rehabilitated to represent its historic appearance as an earthen and gravel road. If use of an unbound earthen and gravel material with stabilizer is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting should be considered. The historic alignment should be marked in the field and the historic grade should be maintained. Asphalt should be removed, and the new surface materials should be consistent with the historic texture and appearance. If possible, they should be acquired from local areas where they would have originally been obtained.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”
- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character.³ (Appendix 2)

The east driveway contributes to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914). The east driveway should be rehabilitated to represent its historic appearance, which was likely an earthen/gravel surface. Use of an unbound earthen and gravel

material with stabilizer is preferred, but if this is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. The historic alignment should be marked in the field and the historic grade should be maintained. Asphalt should be removed, and the new surface materials should be consistent with the historic texture and appearance. If possible, they should be acquired from local areas where they would have originally been obtained.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the carriage drive- loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”
- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Repair and/or replace perimeter sidewalks and front steps.⁴

The perimeter sidewalks and front steps, most likely constructed concurrently with the house in 1882, contribute to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914). Sections of the walk that are uneven or severely cracked are a safety hazard and should be repaired. Patch tests should be conducted to ensure the correct color, texture, and finishing matches the original. New material should use aggregate that is similar in color and character with the historic (shape and size) and then ensure a washed finish to expose the aggregate so the surface is not “white”. Replace full sections only, from joint to joint, and include the raised edge if applicable. Contemporary concrete pavers set into the lawn panels and planting beds at some intersections should be removed. New sections should be discreetly date stamped.

Remove asphalt surface on upper portion of the Woodshed Road and replace with a surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road.⁵ (Appendix 2)

The Woodshed Road contributes to the significance of the park as a character-defining circulation feature of the historic period (1849- 1914). The upper portion of the Woodshed Road serves as part of the accessible route to the Muir House. Like the easy access trail, it is surfaced in asphalt and consequently does not appear to be a historic road. The road should be rehabilitated to represent its historic appearance, which was likely an earthen and gravel surface. Use of an unbound earthen and gravel material with stabilizer is preferred, but if this is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. The historic alignment should be marked in the field and the historic grade should be maintained. If possible, materials should be acquired from local areas where they would have originally been obtained. Care should be taken to protect the historic Oregon white oak next to the retaining wall.

On the lower portion of the Woodshed Road, the awkward patches of the old soil cement surface should be stabilized or repaired. The historic character of a two-track lane should be protected.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the carriage drive-loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”
- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character.⁶ (Appendix 2)

The triangle intersection contributes to the significance of the park as a character-defining circulation feature of the historic period (1849- 1914). The

eastern leg of this important junction historically connected the carriage drive- loop to the southeast farm road (see separate task) and restoration of this segment will reestablish that connection (Figures 2.1 and 2.6). The northern leg connecting the carriage drive- loop and the main farm road should be rehabilitated to represent its historic appearance as an earthen and gravel road. Use of an unbound earthen and gravel material with stabilizer is preferred, but if this is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. The historic alignment should be marked in the field and the historic grade should be maintained. If possible, materials should be acquired from local areas where they would have originally been obtained. Extra care should be taken to minimize impacts on the giant sequoia.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the carriage drive- loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”
- MH: Vegetation – Carriage drive- loop – “Retain and maintain the giant sequoia”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Remove the asphalt surface of the fire lane and replace with a compatible surface.⁷

The fire lane does not contribute to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914) and is incompatible in the historic landscape. Maintaining the impermeable surface is preferred on this particular road because of the steep grade and its use by maintenance and emergency vehicles. However, as the asphalt surface detracts from the park’s historic character, the existing asphalt should be removed and replaced with a bonded aggregate surface or another technique that is compatible in this location and setting. The surface appearance of the fire lane should be different than the park’s historic circulation features.

Related tasks:

- MH: Circulation – “Remove asphalt surface of the easy access trail and replace with a compatible surface”
- MA: Circulation – “Improve pedestrian and maintenance access into the west side of the House Unit”
- VC: Circulation – “Circulation recommendations for the proposed Visitor Center”

Remove the asphalt surface of the easy access trail and replace with a compatible surface.⁸

The easy access trail does not contribute to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914) and is incompatible in the historic landscape. Despite this evaluation, the path should be maintained as it provides an ADA- accessible route from the Visitor Center to the Muir House. As such, maintaining the impermeable surface is preferred on this particular path, but at the same time the current asphalt surface detracts from the park’s historic character. The existing asphalt should be removed and replaced with a bonded aggregate surface or another technique that is compatible in this location and setting. The surface appearance of the trail should be different than the park’s historic circulation features.

Related tasks:

- MH: Circulation – “Remove asphalt surface of the fire lane and replace with a compatible surface”
- MA: Circulation – “Improve pedestrian and maintenance access into the west side of the House Unit”
- VC: Circulation – “Circulation recommendations for the proposed Visitor Center”

Test and replace the walkway surface at the Victorian garden.⁹

The walkway in the Victorian garden contributes to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914). This path provided a direct route from the door on the east side of the brick addition to the steps built into the retaining wall below the former Woodshed Road. The path likely featured an earthen surface. The existing concrete, which is in poor condition, should be removed; however, samples of the concrete should be saved and compared, if possible, to the concrete walkways around the house to determine its approximate date of

construction. If the analysis reveals that the concrete is non- historic, the path should be restored as a single track earthen path in the same alignment. If the concrete is determined to be historic, the walkway should be reconstructed with concrete that closely approximates the texture and color of the sample and should be discreetly date stamped.

Related tasks:

- MH: Buildings and structures – “Stabilize, repair, and replace the stone/brick wall and stone steps, southeast of Muir House”
- MH: Buildings and structures – “Replace the Woodshed”

MH: VEGETATION – WEST SLOPE

Retain row of incense cedars.¹⁰

The row of incense cedars contributes to the significance of the park as a character- defining vegetation feature of the historic period (1849- 1914). Between c.1882 and c.1887, fifteen to twenty incense cedar trees were planted in an arc across the upper west slope of the knoll and were likely intended to shield the west side of the Muir House from the wind and the late afternoon sun or separate the landscape around the house from that of the surrounding agricultural landscape (Figures 2.1, 2.6, and 2.7). The trees grew quickly, especially those on north and south end of arc and by c.1905 some had reached the height of porch eave on west side and were beginning to meet at their bases (Figures 2.8 and 2.9). By c.1910, some of the trees in the arc were removed to ease overcrowding. At end of historic period, the trees were at such a height that you could see between them standing outside the house and over them when looking out the second floor (Figure 2.10). Today, the nine trees that remain are taller than the cupola of the house and are in good to fair condition. The specimen on the south end has a significant lean.

These particular trees should no longer be pruned. When any one of the trees is deemed unsafe, such as the leaning specimen on the south end, it and all of the trees in this feature should be removed. Stumps should be ground and removed, and an arced row of new incense cedars should be planted in between the former stumps. This scenario will best reflect the original design intent in which all of the trees were planted along an arc around the same time. As was the case historically, as the new trees grow, some can be removed in favor of those that are growing well.

Retain and maintain Lebanon and Atlas cedars.¹¹

The Lebanon and Atlas cedars contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). According to a historic photograph from c.1910, both trees grew vigorously, especially the Lebanon cedar which was almost twenty- five feet wide at the base and about as tall as the incense cedars located just upslope (Figure 2.10). Today, these trees are in good condition, although the Atlas cedar still shows signs of being topped in the late 1960s.

The trees should be retained and maintained through a cyclical maintenance program. The soil under the drip lines of both trees should remain undisturbed.

Retain and maintain black locust trees along Woodshed Road.¹²

The two black locust trees along the Woodshed Road contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914). They were likely planted in early 1890s and were approximately twenty to twenty- five feet tall by c.1910 (Figure 2.10). These trees were probably replanted or resprouted after the historic period and today are thirty to forty feet high. They should be retained and maintained through a cyclical maintenance program. Care should be taken to protect the trees when the southeast farm road is recreated.

Related task:

- AG: Circulation – “Replace portion of the southeast farm road”

Reestablish the open space character of west slope.¹³

The Mexican fan palm, coast live oak (4), pomegranate (6), Deodar cedar, Siberian elm, and California fan palm do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible in the historic landscape. They were not present during the historic period as much of the west slope of the knoll was open and covered with grasses, groundcover, or a cover crop (Figures 2.6, 2.8, 2.9, and 2.10). Today, the trees combine to block the views from the lower part of the carriage drive- loop up to the Muir House and from the upper part of the carriage loop- drive westward across the west slope and the agriculture areas beyond. The areas in between the trees are covered in grass. The trees should be removed and their stumps should be ground, removed, and replaced with new soil to create an even grade. The slope should then be

planted in grass. The park may also consider planting several clumps or drifts of Matilija poppies.

Related task:

- MH: Vegetation – South side – “Retain and replace the Matilija poppy; maintain open space character in south lawn”

MH: VEGETATION – CARRIAGE DRIVE-LOOP

Retain and maintain the giant sequoia.¹⁴

The giant sequoia, core dated to 1897, contributes to the significance of the park as a character- defining vegetation feature of the historic period (1849-1914). The tree may have been planted as a seedling by Muir, and possibly earlier than the core date as its location corresponds to a wood crate shown in historic photographs from c.1885 and c.1887 (Figures 2.1 and 2.6). The giant sequoia does not appear again in photographs until 1969 when the height of the tree was equal to that of the roofline of the Muir House. Today, the height of the tree is higher than the house.

The tree has been carefully monitored for fungal infections and soil compaction. This should continue through a cyclical maintenance program, as should attempts to propagate seeds from the fallen cones. Care should be taken to protect the tree when work is undertaken on the triangle intersection.

Related task:

- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”

Reestablish the historic character of plantings along north side of drive, from fish pond space to bottom of loop.¹⁵

The four olives, Canary Island date palm, and two California fan palms contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). The pomegranate does not contribute to the significance of the park as a characteristic vegetation feature of the historic period and is incompatible in the landscape.

Historic photographs show the north side of the drive was defined by two distinct masses of plants approximately ten to fifteen feet tall at the upper and lower ends, with a conspicuous open middle section that allowed views into the fish pond and north orchard spaces. The earliest photograph of the carriage drive- loop dates from c.1885 and shows two agave plants at the

lower end of the drive next to the fish pond, one of which had a stalk upwards of ten feet tall by c.1898 (Figure 2.1). By c.1910, this lower area featured a linear and dense mass of vegetation and which consisted of an olive and possibly agaves (Figure 2.10). Another mass was situated at the upper end of the drive and consisted of the three palms (one was later bent) which were later surrounded by olives. Today, the olives are fifteen to twenty feet tall, and the three closest to the drive arch over it, while the three palms are twenty to twenty-five feet in height. All appear to be in good condition. The olive and palm trees should be retained and maintained through a cyclical maintenance program and propagated for future replacement. The pomegranate situated in the middle section should be removed. Two agave plants should be planted to replace those visible in the c.1885 photograph.

Reestablish the historic character of plantings along south side of drive, from fish pond space to bottom of loop.¹⁶

The arborvitae and honey mesquite contribute to the significance of the park as character-defining vegetation features of the historic period (1849- 1914). The tamarisks and incense cedars do not contribute to the significance of the park as characteristic vegetation features of the historic period and are incompatible in the historic landscape.

Historic photographs show that the middle section of the driveway was open, possibly to allow for a view of the Muir House from the carriage drive-loop. According to a c.1910 photograph, the only plant present along the lower end of the driveway was a small arborvitae (Figure 2.8). Between 1906 and 1914, a honey mesquite was planted near the upper end of the driveway and was part of a larger mass in this area. Today, this area is densely vegetated with an almost continuous line of plants that confine views to the road and prevent a good view of the Muir House.

The arborvitae and honey mesquite should be retained and maintained through a cyclical maintenance program and propagated for future replacement. The tamarisks and incense cedars should be removed because they are situated in the middle section of the driveway, which appeared to be open in historic photographs.

Reestablish the historic character of plantings on east side of loop.¹⁷

The plantings on the east side of the loop, planted after the historic period, do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible in the

historic landscape. After the Muir House and carriage drive- loop were constructed, a mass of roses and possibly hollyhocks were planted along the edge of the driveway, and according to historic photographs appeared to be a continuous mass ranging in height between three to six feet tall, which would have allowed partial views to the north and east (Figures 2.3, 2.11, and 2.12). These plants, along with sections of two- and three- board wood fencing, presumably acted as a barrier to the slope below. The area is now mostly open except for two elderberry that are about ten feet tall and a coast live oak and California white oak that are fifteen to twenty feet tall.

The elderberries and oaks should be removed as they are of a different type and scale of plant compared to what was present historically, and as such partially block the views to the north and east. Varieties of roses that were locally common during the historic period and match the historic form and character should be installed and planted in a zig- zag row (to appear less like a line) along the edge of the drive, from near the fire lane to the junction with the Woodshed Road. However, if a particular historic variety is deemed inappropriate because of, for example, disease issues, then a different variety that is consistent with the historic form and character may be used.

Contemporary considerations will need to include maintenance requirements and potential sources of the plant material. Consultations should be made with a horticulturalist or botanist experienced in historic plant material to identify the plants in the historic photographs and make recommendations for these replacements. The mature heights of the plants should not block views between the Muir House and the Visitor Center. This feature may have extended farther in a southerly direction, like the fence appears to, but such evidence is inconclusive.

Related tasks:

- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings in center island”
- MH: Vegetation – East slope – “Reestablish the historic character of the east slope”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”
- PW: Small scale features – Fences and gates – “Replace the two- rail board fence on the east side of the carriage drive- loop/Woodshed Road”

Retain and reestablish the historic character of plantings on west side of loop.⁸

The significance of these plantings has not been determined. According to a c.1914 historic photograph, this side of the loop featured unidentifiable shrubs three to five feet tall separated by gaps filled with low- growing ice plant (Figure 2.5). The existing arrangement of shrubs and open spaces follows this rhythm.

The park should consult with a horticulturalist or botanist to identify the plants in the historic photographs and compare them to what is present today. The age of the existing plants should be determined, either through coring or cross- section cuttings, and their form and character should be evaluated against the historic documentation. If the existing plants are deemed historic, they should be retained and replaced in kind when necessary. If not, the park should replace them with plants that match the historic form and character. One such consideration may be rose shrubs, which were the dominant plant on this part of the knoll at the end of the historic period and would be similar in habit and form to those shown in the photograph. The mature heights of the plants should allow for views to the southwest (Mt. Wanda).

Regarding the ground cover, ice plant should be reintroduced despite past failed attempts to grow the plant. Although prone to freezes, the plants could be covered if such conditions are expected, or replanted as they are easy to propagate. Ice plant should be planted in an irregular- shaped bed along the edge of the drive from the pomegranate to the top of the loop.

Reestablish the historic character of plantings in center island.⁹

The roses, pomegranate, and quince do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849-1914) but are compatible in the landscape. The agave and areas of grass do not contribute to the significance of the park as characteristic vegetation features of the historic period and are incompatible in the historic landscape. The significance of the California bay is undetermined based on coring data from 1978.

Helen Muir's remembrances of the plants around in the center island and numerous historic photographs provide a good sense of the landscape character of the center island. Near the end of the historic period, the tear-drop- shaped center island space was filled with a variety of shrubs and flowers, and historic photographs show that the plants grew low enough to

allow for views across the island from the carriage drive- loop and from the Muir House looking north and east to the adjacent orchards and fields. The space was defined soon after construction of the driveway with scattered plantings of roses and possibly ice plant around the lower outside edge and two quinces towards the top (Figure 2.4). A photograph from c.1900- 1905 shows the island thick with roses, ice plant, and possibly petunias while a later photograph from c.1914 shows the space bordered with ice plant and lush with roses, quince, and possibly the young California bay tree (Figures 2.3 and 2.5).²⁰ Some of these roses may have been the five- to six- foot- high tea roses (or possibly hybrid tea roses) that Helen Muir recalled in this area.²¹ She also remembered an orange tree, large white lilacs, blue lilac, rose verbenas, and flowering pomegranate in this area (the pomegranate was also recalled by Mr. Figuerado) but they have not been confirmed in any photographs.

The three flowering quince and pomegranate should be retained and maintained through a cyclical maintenance program; however, their heights should be managed to provide opportunities to see across the island. The agave should be removed; however, it could be relocated to the known historic location at the lower north side of the carriage drive- loop. The grass lawn area should also be removed and replaced with ice plant (see related discussion regarding treatment of the west side of the loop). Ice plant should be planted along all edges of the island.

Most of the roses currently present at the lower end of the island, which are David Austin roses, were installed in 1996 by the Master Gardener program run by the University of California Extension Service. The form and character of these plants should be compared to the roses visible in the historic photographs by a horticulturalist or botanist familiar with historic plant material. If it is determined that they are appropriate to the period, they should be retained. If not, varieties of tea roses that were common during the historic period and match the historic form and character should be installed. However, if a particular historic variety is deemed inappropriate because of, for example, disease issues, then a different variety that is consistent with the historic form and character may be used. Contemporary considerations will need to include maintenance requirements and potential sources of the plant material. The mature heights of the plants should not prevent views across the island.

According to analysis by James K. Agee in “Historic Trees of John Muir National Historic Site,” the California bay is potentially historic and attempts should be made again to determine its age.²² Safely assuming that it is, the

maturation of historic plant material is an acceptable condition under the rehabilitation treatment that provides an important link to the past and reflects the natural dynamics of the landscape. In this instance, however, the tree should be removed and replaced in kind to restore the key view between the Muir House and the Visitor Center and greatly help in recreating the historic character and spatial relationships in this area. If a replacement specimen is not readily available, the existing tree should be retained and maintained through a cyclical maintenance program until such a time that it is. The new plant should be maintained so that it does not block views across the island (no higher than four feet).

Related tasks:

- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings on east side of loop”
- MH: Vegetation – East slope – “Reestablish the historic character of the east slope”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”

MH: VEGETATION – EAST SLOPE

Reestablish the historic character of the east slope.³³

The two small incense cedars next to the fire lane, installed after the historic period, do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible in the landscape. The significance of the large incense cedar, coast redwood, pomegranate, California white oak (6), English walnut, and vinca plantings have not been determined due to the lack of reliable documentation.

Historic photographs from c.1900- 1905 show that the southern half of this area, roughly from opposite the conservatory on the east side of the Muir House southward, was the upper extent of an apple orchard and a mass of unidentifiable trees and shrubs about the same height or smaller (Figure 2.11). The northern half of this area, from the conservatory northward, was more open with scattered small trees and shrubs which cannot be readily identified in historic photographs (Figure 2.3). As a result, there were numerous opportunities for views to the east.

Changes after the historic period included the construction of the easy access trail and planting of three incense cedars trees next to the fire lane to honor the founding members of the John Muir Memorial Association. Currently, two of these trees remain along with a small coast redwood, scattered

plantings upslope from the path that include pomegranate and California white oak, incense cedar and English walnut next to the Woodshed Road. Vinca, as a groundcover, is widespread.

The two memorial incense cedars should be removed and transplanted to the eastern end of the north orchard space where incense cedars historically grew. The coast redwood should also be removed. This area should be replanted with the same type of grass proposed for the west slope. The three small and three medium- large California white oaks along the easy access trail should be removed as they will eventually grow too tall to be historically appropriate in this area (and will eventually block the view between the Muir House and Visitor Center much like the California bay tree in the center island does now). The southern end of the east slope should include an apple tree in conjunction with proposed plantings in the east orchard. The English walnut and large incense cedar along the Woodshed Road, at the carriage drive- loop, should also be removed as trees this tall were not present in this area at the end of the historic period. The pomegranate can be retained because it will not grow tall enough to block the important view.

Historic photographs suggest the intervening spaces between plants on the east slope were planted in grass, groundcover, or some type of cover crop, much like the west slope. The slope at the south end was increased when the easy access trail was installed by the NPS and the area was planted with vinca. Although the vinca performs well in holding the slope and minimizing erosion, it is preferable to replant the area with grass, much like the west slope, to better approximate the historic character. Such an endeavor should be performed in conjunction with proposed plans for the east orchard.

Related tasks:

- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings in center island”
- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings on east side of loop”
- AG: Vegetation – East orchard space – “Reestablish historic character of east orchard”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”

MH: VEGETATION – NORTH SIDE**Remove rose and vinca at front steps; replace the cordylines, poppies, and roses along the front walk and steps.²⁴**

Although views from c.1886 and c.1914 suggest that a low hedge was planted along the drive on either side of the front walk, the evidence is inconclusive (Figures 2.4 and 2.5). Photographs from c.1890s and c.1900- 1905 show cordyline trees on either side of the front steps at the carriage drive- loop (Figures 2.3 and 2.13). The c.1890s photograph also shows the roses that are about one to three feet tall (Figure 2.13). In the 1958 interview, Helen Muir recalled the cordylines as well as pink poppies in this area. The existing rose shrub and vinca bed next to the steps should be removed.

The cordyline, pink poppies, and rose shrubs should be replaced. The form and character of the plants in the historic photographs should be evaluated by a horticulturalist or botanist familiar with historic plant material. Varieties of roses that were common locally during the historic period and match the historic form and character should be installed. However, if a particular historic variety is deemed inappropriate because of, for example, disease issues, then a different variety that is consistent with the historic form and character may be used. Contemporary considerations will need to include maintenance requirements and potential sources of the plant material. The mature heights of the plants should not exceed three feet. See also Appendix 4 in Volume 1 of this CLR.

Replace the Monterey pine in the northeast lawn area; maintain open space character in northeast and northwest lawns.²⁵

Photographs from c.1900- 1905 and c.1914 show a Monterey pine engulfed in Banksia rose in the northeast lawn area (Figures 2.5, 2.11, and 2.12). The Monterey pine and Banksia rose should be replaced. The intervening areas should remain open and planted with turfgrass. See also Appendix 4 in Volume 1 of this CLR.

MH: VEGETATION – EAST SIDE**Retain the mourning cypress and Oregon white oak.²⁶**

The mourning cypress and Oregon white oak contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). Although neither are clearly distinguishable in historic photographs (they appear as part of a larger mass of vegetation in this area), the cypress has been core dated to 1909 and the oak to c.1910. The cypress is next to the accessible route to the Muir House (the east driveway/Woodshed

Road junction) and has developed a lean. Its lower branches are periodically pruned. The oak is located at the foot of the stone/brick wall, also along the accessible route (the Woodshed Road portion) and has begun to buckle the asphalt surface. The trees should be retained and maintained through a cyclical maintenance program and their conditions should be closely monitored given their locations next to the accessible route.

Determine the ages of the strawberry tree, loquat, and black walnut.²⁷

The significance of the strawberry, loquat, and black walnut trees have not been determined due to the lack of historical documentation. No information is available on the loquat and black walnut, and neither was cored by Agee in 1978. However, in a 1967/68 interview, the strawberry tree was remembered by Mr. Figuerado as being the same size it was in 1914. The park should plan to core the plants to determine their age. The trees should be retained if they date to the historic period; however, the walnut tree may be a candidate for removal if the Woodshed is replaced.

Related task:

- MH: Buildings and structures – “Replace the Woodshed”

Replace the windmill palm; maintain open space character in east lawn.²⁸

A detailed analysis of a c.1914 photograph suggests that the windmill palm was situated on the east lawn area of the Muir House near the conservatory (Figure 2.5). This plant should be replaced to reestablish the historic character in this side of the house. It is possible that this area was not heavily planted during the historic period because of the presence of the cistern (apparently removed by c.1900- 1905) and the east driveway that lead to the Woodshed. As such, the remainder of the area should be maintained as turfgrass. See also Appendix 4 in Volume 1 of this CLR.

Remove the Victorian flower garden, replace with Oregon white oaks.²⁹

The Victorian flower garden does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is an incompatible feature in the landscape. There is no record of a defined flower garden in this area during the historic period and it should be removed. It may be possible to transplant some of the plants to areas around the entrance to the Visitor Center.

This area was historically shaded by a mass of deciduous trees that appear similar in form and character to the Oregon white oak to the north (Figures

2.8, 2.11, and 2.14). They may have been planted as a windbreak, much like the plantings on the west slope of the knoll. Several Oregon white oaks should be planted here to reestablish this condition.

MH: VEGETATION – SOUTH SIDE

Remove the herb garden.³⁰

The herb garden does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is an incompatible feature in the historic landscape. Historically, an herb garden was part of a larger vegetable garden in this area of the knoll. Nonetheless, this feature should be removed as there simply is not enough detailed historical information to support the current design. It should be replaced with turfgrass. A future project discussed in Chapter 3 of this report recommends additional plant research around the Muir House, and researching the location of a garden should be part of that effort.

Retain and replace Matilija poppy; maintain open space character in south lawn.³¹

The Matilija poppy does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but is compatible with the historic scene. This plant was a popular perennial during the historic period, and its presence in this area and on the west slope of the knoll was recalled by both Mr. Figuerado and Helen Muir. The current specimen was planted in the 1990s and should be retained and maintained through a cyclical maintenance program. The plant is shrubby in habit and can grow up to six or eight feet in height. When the time comes that the row of incense cedars are removed and replaced and the south side of the house and west slope becomes more open, the park should consider adding more of the poppies. They should be massed in clumps or drifts with areas of grass in between to facilitate mowing maintenance.

Related task:

- MH: Vegetation – West slope – “Reestablish the open space character of west slope”

Determine the ages of the loquat, lemon, sweetbay, and apricot.³²

The significance of loquat, lemon, sweetbay, and apricot trees has not been determined due to the lack of historical documentation. The plants should be dated to help determine their history. If the plants are historic, they

should be retained and maintained, and if not they should be removed and replaced with grass. The loquat is of a size that suggests it may be part of the large mass of vegetation that appears in this area in historic photographs (Figures 2.8, 2.11, and 2.14).

MH: VEGETATION – WEST SIDE

Remove apple tree; maintain open space character in west lawn.³³

The lawn area on the west side of the Muir House contributes to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914). At the end of the historic period, only a few Monterey pines remained from a larger mass of Monterey pine and cypress that grew in this area bounded by the Muir House and the row of incense cedars. Soon after, the pines were removed.

The fast- growing pines were likely intended to screen the house from the wind and the western sun but were gradually cut, probably to admit more light into the house and to ease crowding the row of the maturing incense cedars. Although replacing the pines is an option, the incense cedars were apparently the more favored trees in this area than the Monterey pines. Therefore, they should not be replaced. The existing open lawn area should be maintained with turfgrass.

The apple tree at the southern end of the lawn space is a grafted tree with scionwood taken from an apple tree dating to 1859 and obtained from a historic orchard at Yosemite National Park in 1998. As the tree is likely a semi- standard or semi- dwarf tree, it should be removed.

Remove the privet hedge.³⁴

The privet hedge, planted in 1999, does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is incompatible with the historic scene. The hedge should be removed as there is no historic precedence for this feature in this area.

MH: VEGETATION – FOUNDATION PLANTINGS

Retain and maintain California fan palms in north beds, and Canary Island date palm and lemon in east bed.³⁵

The two California fan palms and the Canary Island date palm contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). The lemon tree, replanted in 1985, does not contribute to the significance of the park as a characteristic vegetation

feature of the historic period (1849- 1914) but is compatible with the historic scene. By c.1914, the east fan palm reached the top of the second floor window of the Muir House, while the west specimen was slightly shorter and probably partially blocked Muir's view to the north from his second floor scribble den (Figure 2.5). By c.1910, the date palm was almost as high as the eave of the house (Figure 2.14). The lemon tree was present in c.1890 and was about five feet tall (Figure 2.12). It collapsed in 1985 and was replaced in kind. The trees should be retained and maintained through a cyclical maintenance program. The park should propagate the lemon tree through grafting and sources should be identified to replace the date palm. The two California fan palms in the north foundation beds were planted at the same time. Therefore, when either of the two fan palms needs to be removed because of age or disease, the other fan palm should also be removed so that both trees can be replaced at the same time.

Reestablish historic character of the foundation beds. (Figure 2.15)

Although it is somewhat problematic to rely on one person's recollections, Helen Muir's remembrances of the plants around the Muir House are the only source of historical information currently available (regrettably, historic photographs do not show enough detail of the foundation beds). For the purposes of this CLR, information from Helen's 1958 interview is considered the primary source of documentation (see Table 3.1 in Chapter 3, Volume 1). A secondary source of information comes from the 1968/69 Historic Landscape Plan produced by the NPS. The extent of research that supported the plan is not known, nor is it clear whether plants shown on the plan were existing (and possibly from the historic period) or proposed. However, the locations of some of the plants generally correspond to Helen's plant list. As such, plants that exist today and correspond to both Helen's recollections and the 1968/69 plan should be considered as historic until definitive evidence suggests otherwise.

As useful as Helen's list is, there still remains many questions regarding specific types of plants and their size, form, habit, flower color, etc. The following paragraphs offer guidelines to reestablish the historic character of the foundation beds, which were part of the lush and verdant gardenesque landscape that characterized the knoll and areas around the Muir House by the end of the historic period.

The guidelines lean heavily on Helen's list. In some cases, however, details regarding the choice of varieties will require additional research of historic photographs, documents, catalogs, etc. by a horticulturalist or botanist

knowledgeable of historic plant materials. Wherever possible, varieties from the historic period should be used. However, if a particular historic variety is deemed inappropriate because of, for example, disease issues, then a different variety that is consistent with the historic form and character may be used. Contemporary considerations will need to include maintenance requirements and potential sources of the plant material.

- *Northwest bed.* The plantings in the northwest foundation bed do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic scene. Helen recalled camellia and white rose as well as lilies around the palm tree. The shore juniper and chasmanthe in the beds today are inconsistent with these recollections and should be removed. The 1968/69 Historic Landscape Plan proposed a scotch broom at the corner to anchor the bed. This concept should be restored, but a Banksia rose should be planted here instead as it may be the white rose remembered by Helen, was present in other foundation beds, and was one type of the many roses planted in and around the nearby carriage drive- loop area. In addition, chrysanthemums should be planted in this bed to provide balance to those Helen remembered in the northeast bed. Low growing chrysanthemum species that date to the historic period should be considered, both for compatibility reasons and to minimize staking and other maintenance requirements.
- *Northeast bed.* The plantings in the northeast foundation bed do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic scene. The vinca in the beds today is inconsistent with Helen’s recollections and should be removed. The plants she recalled – violets, forget- me- nots, heliotrope, clump roses, chrysanthemums, and lilies around the palm tree – should be installed. A camellia should be planted in this bed to balance the plant Helen remembered in the northwest bed.
- *East beds.* The plantings in the east foundation beds do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic scene. Today, this area includes Oregon grape holly planted in 1996, common calla, Chinese wisteria, and vinca. These plants should be removed in favor of the plants remembered by Helen Muir: carnations, Canterbury bells, and honeysuckle.
- *West beds.* The plantings in the west foundation beds at the Muir House do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914), but they are compatible with the historic scene. Recollections of this area from Helen Muir – variously described as the west side, west porch, and west front – included plantings of lavender, amaryllis, bridal wreath spiraea, callas, geraniums, gladiolus, orange, Matilija poppy, double wisteria, double Cherokee roses (Lady Banksia) and other roses, chrysanthemums, and “something like ice plant... along walk.”³⁶ Some of these plants, such as the poppy, may have been located on the west slope. Today, this area features three types of plants remembered by Helen: Banksia rose, orange, and wisteria. To simplify the design in the limited space available, the following plants from Helen’s list should be installed: another Banksia rose and wisteria, bridal wreath spiraea,

geraniums, and gladiolus (which can also be planted in the small bed at the southeast corner of the house, next to the door). The chasmanthe should be removed.

MH: BUILDINGS AND STRUCTURES

Stabilize, repair, and replace the stone/brick wall and stone steps, southeast of Muir House.³⁷

The stone/brick wall and steps, constructed in the late 1880s or early 1890s, contribute to the significance of the park as characteristic structures of the historic period (1849- 1914). They were likely built to create a level space for the Woodshed and to retain the slope for the Woodshed Road. The wall and steps are currently in poor condition and the steps and adjacent path are closed to the public. Plant material and debris immediately adjacent to the steps and wall should be removed and the surviving sections stabilized. Once this is done, it will be apparent if missing or severely deteriorated sections require repair or replacement. Care should be taken to protect the historic Oregon white oak next to the wall.

Related tasks:

- MH: Circulation – “Test and replace the walkway surface at the Victorian garden.”
- MH: Buildings and structures – “Replace the Woodshed”

Replace the Woodshed.³⁸

By c.1887 a one- story, rectangular- shaped wood structure with a gabled roof was constructed on the southeast side of the Muir House near the kitchen door. This structure was used to store firewood and later a large iron and brick kitchen range. It was likely removed by the Kreiss family between 1937 and 1955, possibly around the time when they relocated the Carriage House to this area. The park’s 1965 Master Plan recommended interpreting the site, possibly with a reconstructed structure if adequate documentary evidence was located.

The Woodshed should be replaced to illustrate than important part of late nineteenth domestic life and to restore the historic scene in this part of the park. Although there are no detailed photographs of the building, images from c.1887, c.1898, and c.1900- 1905 show glimpses of the roof and the east, south, and west elevations (see Figure A4.7 in Appendix 4, Volume 1). An archeological investigation may be useful to locate and reveal the site. Such work may reveal important physical evidence and ensure that extant

resources are not inadvertently lost or damaged. (An archeological study may also yield remnants of the Carriage House when it stood in this area).

Related tasks:

- MH: Buildings and structures – “Stabilize, repair, and replace the stone/brick wall and stone steps, southeast of Muir”
- MH: Circulation – “Test and replace the walkway surface at the Victorian garden.”
- MH: Vegetation – East side – “Determine the age of the strawberry, loquat, and black walnut”

TREATMENT TASKS CONSIDERED AT THE MUIR HOUSE AND KNOLL BUT NOT RECOMMENDED

Realign the loop portion of the carriage drive-loop at the top of the center island.

The upper portion of the center island of the carriage drive- loop was widened to better accommodate the turning radii of emergency vehicles. Reclaiming this small area would not have a great effect on the character of the drive and may possibly hinder the ability of emergency vehicles to stop. Additionally, there is not enough documentary evidence of the original alignment.

Restore the knoll path.

This single- track earthen path connected the rear of the Muir House to the intersection of the southeast farm road and east- west farm lane. However, replacement of the east- west farm lane is not possible because the area is now covered by the embankments of State Route 4. The steep grade of this path and its alignment under the row of incense cedars may prove to be a hazard.

Replace cistern on east side of Muir House.

Historic photographs from the late 1880s and early 1890s show a wood cistern on the northeast side of the house (Figures 2.4 and 2.12). Although this was an important part of the domestic scene, later photographs from the historic period show that it was removed, probably after the larger- capacity water tank was built in the rear addition of the house.

TASKS FOR THE MARTINEZ ADOBE AREA – (MA)

HISTORIC CHARACTER C.1914

By the end of the historic period, the 1849 Martinez Adobe had been remodeled as a residence for Tom and Wanda Hanna and their large family. The lean-to, cistern, and stockpiled materials had long since been removed, and the Ranch Foreman's House to the southwest had been converted into a Bunkhouse. Damage caused by the 1906 earthquake was repaired, electricity and a new lavatory were added, and the verandah was expanded. Barns and corrals were located to the west across Franklin Canyon Road, one of the main routes into the town of Martinez. Like the Muir House, the adobe was surrounded by masses of trees and shrubs that set it apart from the surrounding orderly rows of orchard trees. The few historic photographs available of this area show that it was heavily shaded by pines or cypress trees in the back and black locust trees in the front, with a variety of flowers and shrubs planted in the front. The following treatment tasks aim to recover the historic character of the Martinez Adobe character area.

MA: CIRCULATION

Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character.³⁹ (Appendix 2)

The driveway on the east side of the Martinez Adobe, contributes to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914). The driveway should be rehabilitated to represent its historic appearance as an earthen and gravel driveway. Use of an unbound earthen and gravel material with stabilizer is preferred, but if this is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. The historic alignment should be marked in the field and the historic grade should be maintained. Asphalt should be removed, and the new surface materials should be consistent with the historic texture and appearance. If possible, they should be acquired from local areas where they would have originally been obtained. This road should merge with the existing farm lane that approaches the adobe from the southeast.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the carriage drive- loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”

- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Improve pedestrian and maintenance access into the west side of the House Unit.⁴⁰ (Figures 2.16 and 2.17)

The park aims to improve visitor and maintenance access into the House Unit as part of larger project that will improve operational connections between the Maintenance Facility and the House Unit, improve visitor connections between the House and Mt. Wanda units, ease overcrowding at the Visitor Center parking lot, and rehabilitate some of the historic roads that have been paved.⁴¹ Specifically, this project includes the construction of a secondary parking lot at Mt. Wanda and paving a portion of the California State Riding and Hiking Trail. This segment of the trail, called the tunnel trail, currently features an earthen surface and includes the tunnel under State Route 4 and the section of trail from the tunnel to Canyon Way.

Although maintenance access into the House Unit is possible through the gate at the main farm road, off of Canyon Way, most tools, equipment, and materials are currently moved via surface streets such as Franklin Canyon Way and Alhambra Avenue. Visitors using the pedestrian gate on Canyon Way are forced to walk in the street because of the absence of sidewalks and the presence of parked vehicles adjacent to the park’s boundary fence. This gate has been closed since the September 11th attacks and is only open during special events.

There are two possible alternatives for addressing access into the House Unit from the improved tunnel trail:

- *Construct spur trail in west orchard (Drawing 2.1b).* This option would abandon the existing pedestrian gate along Canyon Way (the vehicular gate at the main farm road would remain for emergency access and large maintenance equipment) and add a new gate along the California State Riding and Hiking Trail. Like the existing gate on Canyon Way, this gate would be equipped with an intercom and an electronic lock that can be opened remotely from the Visitor Center or by a volunteer or ranger. The gate would connect to a new six-foot-wide asphalt spur trail in the west orchard, south of the Martinez Adobe. The new ADA-compliant trail would be limited to pedestrians and small maintenance vehicles, and would be designed to minimize grading and fill and be sensitive to the historic landscape.⁴²

The design and alignment of the spur trail should consider the following guidelines:

- As this new circulation feature post-dates the historic period, it should be differentiated from historic circulation features. The path should feature a bonded aggregate surface or another technique that is compatible in this location and setting. It should have the same appearance as the other non-contributing circulation features in the park – the fire road, easy access trail, and path system around the new visitor center.
- The alignment should consider future plans for the west orchard space as shown in Drawing 2.1b. Use of cut and fill should be minimized as much as possible.

The advantages of this option are: 1) it improves operational functions and connections between the Mt. Wanda and House units sooner than later; 2) it is supported by principles of the recommended Rehabilitation treatment which allows for contemporary additions to improve park operations; and 3) is consistent with goals outlined in the 1991 GMP/EA. The disadvantages are: 1) it introduces a non-historic feature in the park's historic zone; and 2) it may interrupt the rhythm of proposed orchard expansion plans in this area.

- *Redesign Canyon Way cul-de-sac (Figure 2.17).* This option would improve the current circulation pattern and utilize the existing vehicular and pedestrian gates on the west boundary fence on Canyon Way. The cul-de-sac would be redesigned to accommodate a raised concrete sidewalk paralleling the boundary fence that is wide enough to accommodate both pedestrians and park maintenance vehicles. This plan is similar to a drawing developed in 1991 (see Figure 5.33 in Chapter 5, Volume 1).

The most important variable to determine in this option is the location of the right-of-way lines. The park should conduct an engineering survey of this area, as park drawings show conflicting information regarding the distance between the western property line, which appears to be in the paved portion of Canyon Way, and the boundary fence (see Figure 5.4 in Chapter 5, Volume 1). This dimension is critical in locating the curb and determining if there will be enough space for parallel parking within the right-of-way and to design a cul-de-sac that has a large enough turning radius to accommodate fire trucks. Iron pipes and brass monuments noted in Figure 5.4 should be located if possible.

The design and alignment of the multipurpose trail should consider the following guidelines:

- Pavement markings and warning/caution signs must be added to adequately inform both user groups of their designated 'lanes.'
- Fish eye mirrors should be installed at the intersection with the California State Riding and Hiking Trail.

The advantages of this alternative are: 1) it avoids adding a non-historic circulation feature in the park's historic zone; and 2) it allows visitors to enter/exit the site via Canyon Way as was the case historically. The disadvantages are: 1) it incurs higher costs associated with redesign of Canyon Way and installation of sidewalks; 2) it has unresolved property line and right-of-way issues and the likelihood of lengthy negotiations with

adjacent property owners regarding on- street parking; and 3) it may lead to potential safety issues between pedestrians and park maintenance equipment in the vicinity of the oil valves fences (blind spots would mean fish eye mirrors would be needed, which would likely be broken).

Related tasks:

- MH: Circulation – “Remove asphalt surface of the fire lane and replace with a compatible surface”
- MH: Circulation – “Remove asphalt surface of the easy access trail and replace with a compatible surface”
- VC: Circulation – “Circulation recommendations for the proposed Visitor Center”

MA: VEGETATION – WEST BOUNDARY

Replace Cherokee rose along fence; remove pittosporum, rose, sage, coast redwood, western redbud, dwarf coyote brush; and relocate incense cedars.⁴³

The Cherokee rose does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but is compatible with the historic setting. In the early 1890s, Muir planted three dozen Cherokee roses along the fence that bordered Franklin Canyon Road, although the exact locations of the plants are not known. In the late 1980s, the park planted a mass of Cherokee rose along the west boundary fence.

The existing plantings of pittosporum, rose, sage, coast redwood, and western redbud are non- contributing features and should be removed. The existing Cherokee rose shrub should be retained and preserved if possible, and additional Cherokee rose should be planted along the fence in a single, staggered row from the main farm road gate to the utility easement fence. At the utility area fence, the western redbuds should be removed, but the seedling incense cedars should be relocated to the propagation facility at Golden Gate National Recreation Area or another venue. No Cherokee roses should be installed around the utility fence due to frequent spraying inside the fence enclosure by the utility companies.

MA: VEGETATION – NORTH SIDE

Reestablish historic character on north side.⁴⁴

The plantings on the north side of the Martinez Adobe do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic setting. By c.1885, the north side of the building was shaded by a black locust tree that was apparently removed by c.1905, at which time an unidentified shrub was

planted along the north foundation (Figures 2.1 and 2.18). The shrub was removed when the north wall and chimney were repaired following the 1906 earthquake.

The existing memorial Douglas fir, elderberry, and perennials should be removed and replaced with turfgrass. Replacement of the black locust is not recommended as it was removed during the historic period. A horticulturalist with experience in historic plant material should be consulted regarding the unknown shrub. If such an effort cannot identify the shrub, a plant of similar form and character can be used.

MA: VEGETATION – EAST SIDE

Reestablish historic character on east side.⁴⁵

The plantings on the east side of the Martinez Adobe do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic setting. During the Strentzel- Muir Ranch period, the Martinez Adobe was initially used as a storehouse and ranch headquarters and then as a residence. A c.1885 photograph suggests this area was probably a workyard and showed some type of fruit tree in front (Figure 2.1). The only detailed photograph of the front of the building dates from c.1912- 1913 and shows one of the three black locust trees remembered by Mr. Figuerado and others surrounded by a mass of low shrubs and flowers (Figure 2.19). Mr. Figuerado also remembered a redwood tree to the southeast and a pine to the northeast.

This area was likely well- shaded because of the tall locust trees. To restore this character, three black locust trees should be planted in front of the building. The location of the southernmost specimen can generally be estimated from Figure 2.19. The other trees should be planted parallel to the east driveway about twenty feet apart to encourage their canopies to eventually merge as they mature. As the trees mature, their lower limbs should be managed to preserve the view to the east of the Muir House. Replacement of the flowers and shrubs around the black locust is not recommended because the size of this bed is not known. Similarly, the historic location of a pine recalled by Mr. Figuerado as “northeast of the house” is too vague to recommend a replacement.

The two memorial Colorado blue spruces and one white spruce, as well as a Sitka spruce, should be removed, but the coast redwood should be retained and maintained as it may be the tree remembered by Mr. Figuerado or a later stem. The quince should be removed, as its form does not appear to be consistent with the fruit tree shown in Figure 2.19. The park should consult

with a horticulturalist experienced in historic plant material to identify the fruit tree in the photograph. If it cannot be replaced in kind, a plant of similar form and character, such as a sweet cherry, should be planted just to the north so that it is closer to the approximate location of the tree shown in the photograph. Intervening spaces on the east side should be planted with turfgrass.

MA: VEGETATION – WEST SIDE

Reestablish historic character on west side.⁴⁶

The Monterey pine on the west side of the Martinez Adobe does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but is compatible with the historic scene. The English walnut, wisteria, and American dogwood also do not contribute to the significance of the park as characteristic vegetation features of the historic period and are incompatible. In historic photographs from c.1901, c.1905, and c.1912- 1913, a mass of pines and/or cypress planted on the west side of the adobe towered over the building and were well over seventy- five feet high (Figures 2.18, 2.19, and 2.20). There may have been fewer trees after the adobe was converted to a residence for the Hanna family and this area was turned into a driveway. However, the area still appeared as heavily shaded by the trees.

Monterey pines were the most common type of pine at the site at the end of the historic period, and they far outnumbered cypress. In addition, the types of cypress have not been clearly identified. Therefore, to recapture the historic character, several additional Monterey pine trees should be planted. The exact historic location of the trees is not known, but there is ample room between the west boundary fence and the paths and patio at the adobe. The large Monterey pine next to the main farm road is known to have been planted after the historic period. However, it is located in an area that was historically planted with pines (and cypress) and should therefore be retained and maintained. The park should closely monitor this tree and its effect on the surface of the main farm road and gate. When the tree dies, it should be replaced with another Monterey pine that is set back farther away from the road.

The black walnut, wisteria, and American dogwood are not historic and should be removed. The remaining areas should be replanted in turfgrass.

Related tasks:

- MA: Buildings and structures – “Remove the ramada”

- MA: Buildings and structures – “Replace the foundation or entire Bunkhouse/Ranch foreman’s house”
- AG: Vegetation – West orchard space – “Reestablish historic character of west orchard”

MA: VEGETATION – FOUNDATION PLANTINGS

Reestablish character of foundation plantings.⁴⁷

The wisteria on the east foundation of the Martinez Adobe contributes to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914). There is no reliable historic documentation regarding other plants on the east side or the foundation plants around the south, west, and north sides. The wisteria was present in c.1912- 1913 and replanted by the NPS in the same location. In a photograph from that time, the wisteria is tangled around each end of the veranda. Other relatively low vegetation is visible and appears to be mostly perennials, but they cannot be accurately identified (Figure 2.19).

To reestablish the historic setting at the foundation beds, additional wisteria and beds of perennials are proposed. The types of plants should be drawn from the list of perennials remembered by Helen Muir and present at the Muir House. The main justification for this choice is that both the Muir House and Martinez Adobe were used as residences at the end of the historic period. Given that the entire Muir family was horticulturally inclined and that planting was often a family affair; it can be presumed that plants were divided, swapped, and shared.

Species at the Muir House included carnations, canterbury bells, clump of lavender, amaryllis, callas, geraniums, gladiolas, heliotrope, chrysanthemums, violets, and forget- me- nots. These plants can be used throughout the beds. Wisteria should be preserved and maintained on the north end of the veranda and planted at the south end of the veranda. Any other plantings should be removed from the beds.

As with the proposed guidelines for the foundation beds at the Muir House, details regarding the choice of varieties will require additional research of historic photographs, documents, catalogs, etc. by a horticulturalist or botanist knowledgeable of historic plant materials. Wherever possible, varieties from the historic period should be used. However, if a particular historic variety is deemed inappropriate because of, for example, disease issues, then a different variety that is consistent with the historic form and character may be used. Contemporary considerations will need to include maintenance requirements and potential sources of the plant material.

MA: BUILDINGS AND STRUCTURES**Remove the ramada.⁴⁸**

The ramada does not contribute to the significance of the park as a characteristic structure of the historic period (1849- 1914) and is an incompatible feature. Although the structure is situated in one of the park's development zones, the design, materials, and scale of the structure are nonetheless incompatible with the historic character. It is recommended that this structure and its concrete pad be removed. The area should be reseeded as a grass lawn. The picnic tables under the ramada could be relocated to the adjacent brick patio or in other areas of the park such as the proposed picnic area south of the Martinez Adobe.

Related tasks:

- MA: Vegetation – West side – “Reestablish historic character on west side”
- MA: Buildings and structures – “Replace the foundation or entire Bunkhouse/Ranch foreman’s house”

Replace the well structure northeast of Martinez Adobe.⁴⁹

Between 1907 and 1910, a thirty- foot deep well was dug a short distance northeast of the Martinez Adobe to supply water to the building and water the plants. During this time, the Martinez Adobe was occupied by Wanda Muir Hanna and her husband Tom. From 1915 to 1917, the well was covered with boards. The location of this feature, identified by a simple wood cover, should be interpreted in the landscape to show the importance and convenience of having a well close by during this moment in history. Although a photograph from 1963 may aid in locating the historic well (between 1921 and 1955, a redwood septic tank was installed next to it), an archeological survey may be more useful (see Figure A4.9 in Appendix 4, Volume 1). It may reveal important physical evidence and ensure that extant resources are not inadvertently lost or damaged.

Replace the foundation or entire Bunkhouse/Ranch foreman’s house.⁵⁰

By c.1885, a one and one- half story building with vertical board framing and a gabled roof was located just southwest of the Martinez Adobe. It is believed the structure was used as a residence for the ranch foreman. From 1894 to 1897, the structure was occupied by the Firth family, and between c.1907 and 1910, soon after Tom and Wanda (Muir) Hanna remodeled the Martinez Adobe as their residence, this building was converted into a bunkhouse for ranch hands. The structure was removed in c.1962- 1963 except for the

foundation. Between 1964 and 1976, the foundations of the Bunkhouse as well as the Cookhouse were removed or covered.

The Bunkhouse/Ranch foreman's house was an important part of the operations at the Strentzel- Muir Ranch that were based out of the Martinez Adobe. For this reason, the building should be interpreted to visitors. Historic photographs shown in Figure A4.8 in Appendix 4, Volume 1, may help locate and replace this structure as may archeological information from the "Historic Structures Report, Martinez Adobe, John Muir National Historic Site, California." Additional archeology may be required. The building could be used as a storage facility/staging area for the Environmental Living Program and for other school group activities. If replacement of the entire structure is not feasible, at a minimum the foundation should be replaced (or uncovered).

Related tasks:

- MA: Vegetation – West side – “Reestablish historic character on west side”
- MA: Buildings and structures – “Remove the ramada”

TREATMENT TASKS CONSIDERED AT THE MARTINEZ ADOBE BUT NOT RECOMMENDED

Remove patio and brick walls on west side of Martinez Adobe, replace missing driveway.

The brick patio and walls on the west side of the Martinez Adobe do not contribute to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914). Toward the end of the historic period, this area was used as a driveway. Although the patio and wall are incompatible with the historic scene, there is not enough reliable documentation available to accurately restore the driveway.

TASKS FOR THE AGRICULTURAL AREAS – (AG)

HISTORIC CHARACTER C.1914

At the end of the historic period, distinctive blocks of fruit trees and grape vines covered the fertile flatlands and lower slopes of the Alhambra Valley like a patchwork quilt. The orchards and vineyards were typically set out in single variety blocks of one kind of fruit in neat rows, each with their own unique spacing. The agricultural lands around the Muir House and Martinez Adobe were no exception and featured row upon row of cherries, apricots, lemons, oranges, plums, peaches, apples, walnuts, and pecans. These crops filled every

available space, pushing up against the edges of Franklin Creek, the fish pond space, and the farm roads and lanes. This orderly scene contrasted with the loose arrangement of trees and shrubs around the house and adobe and the masses of vegetation that defined the creek banks and the steep slopes of the upper hillsides. The following treatment tasks aim to recover the historic character of the agriculture character area.

AG: CIRCULATION

Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character.⁹ (Appendix 2)

The main farm road contributes to the significance of the park as a character-defining circulation feature of the historic period (1849- 1914). The road should be rehabilitated to represent its historic appearance as an earthen and gravel road. Use of an unbound earthen and gravel material with stabilizer is preferred, but if this is not possible, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. The historic alignment should be marked in the field and the historic grade should be maintained. Asphalt should be removed, and the new surface materials should be consistent with the historic texture and appearance. If possible, they should be acquired from local areas where they would have originally been obtained.

A broad earthen swale is located east of the Franklin Creek Bridge and runs perpendicular across the road. The performance of this swale in conjunction with the proposed road improvements will need to be monitored, especially after heavy rain events. Installation of inconspicuous at-grade drop inlets and a culvert pipe may be needed in the future.

Related tasks:

- MH: Circulation – “Remove asphalt surface on the carriage drive- loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”

- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”

Replace portion of the southeast farm road.⁵²

The well-used earthen farm road was one of three roads that converged at the triangle intersection next to the fish pond space and the Carriage House. Historically, the road tracked in a southeasterly direction past orchards, vineyards, and a grove of eucalyptus before passing under the AT&SF trestle. It likely intersected with Alhambra Valley Road south of the AT&SF railroad trestle, which leads to the Alhambra ranch house (see Figure A4.1 in Appendix 4, Volume 1).

Restoration of the road up to the south boundary fence will help visitors understand that the Strentzel- Muir Ranch extended much farther south until after Muir’s death when a new highway, and ultimately the present State Route 4, was constructed. To illustrate this continuum of events, this feature should be developed and maintained as a five to six-foot-wide trace with a grass roadbed free of any visible tracks. The road trace should be sited so that it does not adversely effect the black locust trees along the Woodshed Road or the eucalyptus tree near the south-east boundary fence.

Restoration of this feature will require the removal of approximately three plum trees.

Related tasks:

- MH: Vegetation – “Retain and maintain black locust trees along Woodshed Road”
- AG: Vegetation – South-east boundary – “Retain and maintain eucalyptus grove (4)”
- AG: Vegetation – Middle orchard space – “Reestablish historic character of middle orchard”

AG: VEGETATION – NORTH-WEST BOUNDARY**Retain, maintain, and replace fig trees.⁵³**

The fig trees contribute to the significance of the park as a character-defining vegetation feature of the historic period (1849- 1914). Only one of the trees still survives, but the nine others are clones of the original trees. The Monterey pine, toyon, California buckeye, pacific wax myrtle, English hawthorn, star jasmine, and butterfly-bush do not contribute to the significance of the park as characteristic vegetation features of the historic period and are incompatible with the historic scene.

A line of fig trees was planted west of Franklin Creek along the north side of the main farm road by c.1885 (Figure 2.1). They did not form a continuous line, however, with a distinct gap roughly midway between the creek and the Martinez Adobe (Figure 2.18). Another opening may have been located opposite the Martinez Adobe for a farm lane that ran from the main farm road to Franklin Canyon Road, but this exact location has not been determined. After the historic period, all but one of the figs died; it still remains as do nine of thirteen clones which are about as tall as the north-west boundary fence. The other plants were added in between the figs to screen the residences on the other side of the fence. The location of the butterfly-bush approximately corresponds to the location of the historic gap mentioned above.

The original and cloned figs should be retained and maintained, and additional figs should be propagated. Treatment of the other vegetation is somewhat more problematic as maintaining a screening feature in this area is important and desirable. The non-contributing plants – California buckeye, Monterey pine, toyon, pacific wax myrtle, and English hawthorn – should be removed but only when additional fig clones become available for planting. Of these plants, the first to be removed should be the buckeyes; they are the most distracting due to their current heights (upwards of twenty feet), potential heights (up to thirty feet), and large and showy plume-like flowers. In addition, star jasmine should be planted along the entire run of boundary fence to serve as an additional screen and to function as a contrasting backdrop to the figs (star jasmine has dark green foliage while figs have bright green leaves), especially in areas where fig clones are installed. The jasmine is an evergreen and will form a year round barrier on the fence which will screen out the neighbors when the figs have lost their leaves. The butterfly-bush should be removed so that the historic gap is more obvious.

AG: VEGETATION – SOUTH-WEST BOUNDARY

Remove coast live oak, almond, fig, California white oak, California black walnut, and coast redwood; remove railroad ties; relocate incense cedars and dwarf coyote brush.⁵⁴

The dwarf coyote brush, coast live oak, almond, fig, California white oak, California black walnut, incense cedar, and coast redwood do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic scene. These types of plants have no historic precedence in this area and should be removed.

The series of stepped railroad ties should be removed as it is not a historic feature. Most of the oaks are seedlings and should be removed now because those that are allowed to mature will eventually shade the west orchard and may block views to the south of Mt. Wanda. The large coast redwoods near the culvert should also be removed as they partially block the view between the Muir House and Mt. Wanda and cast shade over both the west and middle orchards. The incense cedar seedlings should be moved to the plant propagation facility at Golden Gate National Recreation Area or another venue. Dwarf coyote brush can be left in the retaining wall area and/or relocated (if feasible) to the Franklin Creek area. The park should continue working with CALTRANS to ensure the dense mass of vegetation beyond the fence is maintained and kept low so as not to block views of Mt. Wanda.

Related tasks:

- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”
- AG: Buildings and structures – “Maintain, repair, and replace stabilization structures along Franklin Creek; paint culvert headwalls”

AG: VEGETATION – SOUTH-EAST BOUNDARY

Retain and maintain eucalyptus grove (4).⁵⁵

The eucalyptus grove contributes to the significance of the park as a character- defining vegetation feature of the historic period (1849- 1914). The trees appear in a photograph from c.1910 as two groups that are perhaps fifteen feet tall (Figure 2.14). Most of these trees were included within the fence of the Muir Homestead when the boundaries were set out in 1908. However, when the park’s boundaries were set out in 1964, many were not included in the property because of the right- of- way and fill slopes associated with upgrades to State Route 4. Today, there are seven large trees, four of which are within the park’s boundaries. The trees should be retained and maintained through a cyclical maintenance program and propagated for future replacement. The park should continue to monitor the trees on CALTRANS property and work with them to address preservation and maintenance issues and to ensure the dense mass of vegetation beyond the fence near the creek is maintained and kept low so as not to block views of Mt. Wanda.

Related tasks:

- AG: Vegetation – South- east boundary – “Retain and maintain eucalyptus grove (4)”
- AG: Circulation – “Replace portion of southeast farm road”

Retain and maintain Canary Island date palms (2) and Mexican fan palm.⁵⁶

The two Canary Island date palms and the Mexican fan palm contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). Planted in c.1905, a historic photograph from c.1910 shows them within the fence of the Muir Homestead and taller than the nearby apple trees (Figure 2.14). Like some of the eucalyptus trees, one of the Canary Island date palms was let out of the park boundary in 1964. All of the palms should be retained and maintained through a cyclical maintenance program and propagated for future replacement. The park should continue to monitor the palm on CALTRANS property and work with that agency to address future preservation and maintenance issues.

Remove coast redwood, coast live oak, California white oak, sweet cherry, cherry plum, pepper tree, and California black walnut; relocate incense cedars.⁵⁷

The incense cedar, coast redwood, coast live oak, California white oak, olive, sweet cherry, cherry plum, pepper tree, and California black walnut do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic setting. The trees were planted by the NPS to visually screen the incompatible land uses to the east. There is no known historic precedent for the plants in this area, and therefore they should be removed. The incense cedar seedlings should be transplanted to the temporary plant propagation area in the west orchard. This area should be replanted with turfgrass or cover crop. The Mexican fan palms on CALTRANS property are not historic; when they die they should not be replaced.

Related task:

- AG: Vegetation – East orchard space – “Reestablish historic character of east orchard”

AG: VEGETATION – NORTH-EAST BOUNDARY**Remove coast redwood, California white oak, California black walnut, and coast live oak.⁵⁸**

The coast redwood, California white oak, California black walnut, and coast live oak, planted by the NPS, do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) and are incompatible with the historic scene. The plants should be removed as historic photographs do not show these types of plants in this area. Most were planted in the 1990s to screen the adjacent post office facility. When the plants that are left to grow eventually mature, they will be out of scale with the fruit trees in the north orchard.

Related task:

- AG: Vegetation – North orchard space – “Reestablish historic character of north orchard”

AG: VEGETATION – FRANKLIN CREEK**Retain and reestablish historic character of Franklin Creek.⁵⁹ (Figure 2.21)**

Riparian vegetation along Franklin Creek, north of the main farm road, does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but is compatible with the historic scene. Riparian vegetation along Franklin Creek, south of the main farm road, does not contribute to the significance of the park as a character-defining vegetation feature of the historic period and is incompatible with the historic scene.

During the latter half of the historic period, vegetation north of the main farm road included willow, oak, and buckeye, while buckeye and other unidentified plants comprised the area to the south. There were undoubtedly other trees, shrubs, and groundcovers that were likely found along other streams in the area. By the end of the historic period, some of the vegetation on the north side reached as high as the blades of the Franklin Creek windmill, but on the south side vegetation was much shorter and rarely exceeded the height of the adjacent fruit trees. This latter condition allowed for mostly unobstructed views across the creek between the middle and west orchard spaces and to the Muir House and Martinez Adobe beyond (Figures 2.1, 2.2, 2.6, and 2.14). Currently, this view is blocked due to the presence of tall shrubs and trees (also see Figure 8.6 in Chapter 8, Volume 1).

The park should aim to reestablish the historic visual and spatial relationship and the overall historic character of the creek as described above. Paralleling

this effort should be the establishment of a healthy riparian environment. Achieving such complex goals will require extensive consultations with natural resource specialists regarding the removal and planting of vegetation, the selection of appropriate plant species, and the phasing of the work to protect the stream. Other issues to be considered will be the sources and peak flows of stormwater runoff (especially from State Route 4) and the effects of future actions on downstream interests. Adjacent property owners and relevant local and state agencies will need to be involved as well.

An excellent starting point for future planning efforts may be a report produced in 1981, “Management Recommendation for the Removal of Introduced Woody and Prominent Herbaceous Perennials Along Franklin Creek,” by William E. Davis.⁶⁰ The document focused on removing non-native plants and creating a native plant environment along the creek that could give the impression of Muir’s love of wild things.⁶¹ The report also provided a phased schedule to remove the non- native plants over time so that bank erosion would be minimized.

The following considerations relate to the overall desired character and to types of plants:

- *South of main farm road, both sides of creek:* This area covers both sides of Franklin Creek. To preserve open views across this section, planting of new trees should be discouraged. Instead, new plantings should be limited to short grasses and shrubs that can be maintained and periodically pruned. This area of vegetation should extend no more than fifteen feet from the water’s edge on each side of the creek. Plants should be placed in masses to create a naturalized edge, and the grasses and shrubs should be maintained so that their height does not exceed three or four feet.
- *North of main farm road, east side of boundary fence:* This area extends from the boundary fence eastward toward the fish pond space and the north orchard. The same guidelines for the area south of the main farm road apply here except that the width of the area extends about ten feet eastward from the fence. Establishing low- growing grasses and shrubs as well as medium sized trees will balance out the mostly tall vegetation on the west side of the fence and visually connect with the shrubs proposed in the south area of the creek.
- *North of main farm road, west side of boundary fence:* This area varies in width and is defined by the park’s boundary fence and the creek. Numerous tall trees and limited understory growth are already established and can be supplemented by additional plants to improve the health of the stream and bank.

Specific recommendations for the removal and retention of existing plants and selection of new plants are as follows:

- *Existing plants to removal to improve the historic character.* Although buckeyes existed historically along the creek, there are several specimens

south of the main farm road near the Franklin Creek Bridge that should nonetheless be removed to open up the view across the creek. Coring by Agee in 1978 dated the coast redwood next to the bridge to 1953 but noted an older stem. Historic photographs are inconclusive regarding this tree, and it is now at such a height that it blocks the important view from the main farm road on the west side of the creek to the Muir House. It should be removed.

- *Existing plants to retain.*
 - North of main farm road. Coast live oak and California buckeye should be retained as both were present in this area during the historic period. The current trees form a mass that is similar in height to what was present at the end of the historic period.
 - South of main farm road. Willows were known to have existed during the historic period along the creek, and the tree near the Franklin Creek Bridge should be retained to represent some of the taller vegetation on this stretch of the creek. However, it should not be allowed to exceed the height of the orchard trees to the west.
 - Throughout. Other existing plants, such as sweet cherry, Catalina cherry, California black walnut, and olive will need to be evaluated (see below).
- *Steps for selecting for new plantings.* Oaks, willows, and buckeyes are the only plants that have been identified in historic photographs. There were undoubtedly many others. The following steps should be considered when choosing a plant palette:
 - In the best case scenario, select plants that were either historically present along Franklin Creek or were known to have been typical along waterways in the Alhambra Valley. If that is not possible, choose plants that resemble the character of plants present during the historic period and that will achieve the desired historic character.
 - The next step will be to evaluate which of the plants chosen above will contribute to the health of the stream corridor. Plants that are considered invasive species should not be installed. All native plants should be collected locally and not purchased using commercial stock (which could affect the genotypes in adjacent areas).⁶²

Related tasks:

- AG: Vegetation – South- west boundary – “Remove coast live oak, almond, fig, California white oak, California black walnut, and coast redwood; remove railroad ties; relocate incense cedars and dwarf coyote brush”
- AG: Vegetation – South- east boundary – “Remove coast redwood grove”
- AG: Vegetation – Franklin Creek – “Remove native plant garden”
- AG: Buildings and structures – “Remove or notch the check dam along Franklin Creek”

- AG: Vegetation – Fish pond space – “Reestablish historic character of fish pond space”
- VC: Vegetation – “Planting recommendations for the proposed Education and Visitor Center area”

AG: VEGETATION – WEST ORCHARD SPACE

Reestablish historic character of west orchard.⁶³

The apricots, oranges, lemons, walnuts, and pecans in the west orchard space, planted at various times during the NPS period, do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) but are compatible with the historic scene. The pear trees and two deodar cedars also do not contribute to the significance of the park as characteristic vegetation features of the historic period but are not compatible with the historic scene. Except for the pears, the other kinds of fruit trees were planted in this general area according to one or more of the following sources: the recollections of Helen Muir and Mr. Dickey, and historic photographs (Figures 2.1 and 2.18). The most notable absence from the historic period in this space today is that of cherry trees.

Unlike the other orchard spaces at the House Unit, reliable evidence regarding the layouts and locations of the many kinds of fruit trees that have been referenced in this area are not known. Therefore, it is recommended that this space be managed as an orchard typical of the early twentieth century. The varieties of fruit trees should be simplified from the current number (seven) to four (cherry, black walnut, English walnut, and pear). Compared to other fruit trees, there is less evidence that pears were planted in this space. However, as the pear was Muir’s most important crop, from an interpretive standpoint they should be present at the House Unit (the most visited part of the park) and this space, more than any other, would be a logical place to plant them.

The current layout of fruit trees features single blocks of one kind of fruit with only a few varieties, as was typical at the end of the historic period. However, many of the current trees are semi- dwarf or semi- standard sizes rather than the full size trees that would have been present during the historic period. As such, there are probably more trees present in the orchard than there would have been historically. The treatment plan proposes replacing the entire orchard with full size fruit trees over time to reestablish the historic character. Such work will be a major undertaking and as such should be guided by an Orchard Management Plan. General recommendations and short- and long- term tasks are as follows:

- *General.* In keeping with early twentieth century orcharding practices, the number of varieties in the orchard should be kept to a minimum. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management Plan. Trees should be full size rather than semi- dwarf or semi- standard. As trees die, they should be replaced in kind.
- *Short term.* The park should remove the two large pecan trees that shade the orchard space and contribute to the blocked view between the Martinez Adobe and the Muir House. The picnic tables and grills should be relocated from here to the west section of the orchard, just south of the adobe (see below).
- *Long term.* Achieving the character of an early twentieth century orchard will mean the removal of most of the existing orchard trees and replacing them with full- size fruit trees. In the plan, the new planting rows are oriented north- south and are perpendicular to the centerline of the main farm road. The existing network of farm lanes can remain.
 - North section (roughly bounded on the north by the main farm road, on the east by the creek, on the south by the farm lane, and on the west by the driveway that fronts the Martinez Adobe): The east half should be planted with pears spaced in a thirty by thirty grid, while the west half should be planted with cherries spaced in a twenty- five by twenty- five grid. The grid of trees should fill as much of the west orchard space as possible.
 - South section (roughly bounded on the north by the farm lane, on the east by the creek, on the south by the south- west boundary fence, and on the west by the oil valve fence): The existing black walnut, English walnut, pecan, pear, apricot, peach, and lemon trees should be removed. This section should be planted with English walnut and black walnut trees spaced approximately fifty feet apart.⁶⁴ The walnuts at the far west side of this section will eventually offer shade in the proposed picnic area. The present locations of the adobe brick making area, beehive, and the vegetable garden can be adjusted if needed.
 - West section (roughly bounded on the north by the Martinez Adobe, on the east by the proposed spur trail and existing farm lane, on the south by the proposed walnuts, and on the west by the west boundary fence): The orange tree and California black walnut should be removed. This area should be reserved for the picnic and grill area and should be planted in turfgrass. The adjacent walnut trees will eventually provide much needed shade for the picnic area. Until that time, the two non- contributing Deodar cedars should be retained to provide shade; however, they should not be replaced when they die.

Related tasks:

- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”

- AG: Vegetation – South- west boundary – “Remove coast live oak, almond, fig, California white oak, California black walnut, and coast redwood; remove railroad ties; relocate incense cedars and dwarf coyote brush”
- PW: Small scale features – Miscellaneous – “Remove and relocate picnic tables and grill in the west orchard”
- PW: Small scale features – Signs – “Interpretive signage recommendations throughout the park”

Remove native plant garden.⁶⁵

The native plant garden does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is incompatible with the historic setting. This area includes yellow willow, coast live oak, California black walnut, sugar bush, flowering fuschia, anemone, toyon, and flannel bush. Although these types of plants are native to this area and may have been present, there is no documentation of their presence or arrangement in this location during the historic period. The plants should be removed, although it may be possible to use some of them in replanting efforts along the creek or at the visitor center. This area should be replaced with orchard trees and/or cover crop.

Related tasks:

- AG: Vegetation – West orchard – “Reestablish historic character of west orchard”
- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”

AG: VEGETATION – MIDDLE ORCHARD SPACE**Reestablish historic character of middle orchard.⁶⁶**

The grapes and plums that comprise the middle orchard space do not contribute to the significance of the park as characteristic vegetation features of the historic period (1849- 1914) but are compatible with the historic scene. Historic photographs indicate that plums and grapes were planted in these locations by the late 1890s, with grapes filling the western two- thirds up to the edge of the main farm road and Franklin Creek, and plums filling the eastern one- third up to the southeast farm road (Figure 2.2). However, by c.1905, the area devoted to plums had decreased in favor of grapes, leaving only a few rows next to the southeast farm road and a solitary tree opposite the Carriage House (Figure 2.9). Photographs from c.1910 also show this arrangement of a full orchard space (Figures 2.10 and 2.14).

All of the plants in the space today have been installed since 1964 and resemble the grape/plum layout. The area of grapes is not as densely planted today and there are numerous missing plants. The plum trees are spaced approximately fifteen feet within rows and fifteen- twenty feet between rows. Given the amount of unused space in this orchard space and the location of the south- east boundary fence, the park should retain and expand the existing layout of two- thirds grapes and one- third plums to best recreate the historic condition. General recommendations and short- and long- term tasks are as follows:

- *General.* In keeping with early twentieth century orcharding practices, the number of varieties in the plum orchard should be kept to a minimum. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management Plan. Trees should be full size rather than semi- dwarf or semi- standard. As trees and vines die, they should be replaced in kind.
- *Short term.* Replace missing grape plants and add additional rows to the north, west, and south sides to fill up the space. To allow for maintenance access, a minimum ten- foot wide open space should be left unplanted along the west and south edges of the orchard, parallel to the edge of vegetation along Franklin Creek and the south- east boundary fence, respectively. To minimize damage to new vines proposed next to the creek from periodic high water events, the new plants should be planted so that their crowns are slightly above grade. The health of the plants should be evaluated after such events to determine if maintaining new plants in this area is feasible. Remove the easternmost row of plum trees for replacement of the southeast farm road trace.
- *Long term.* The plum trees are currently in declining health. They should be replaced with a new trees arranged in an orthogonal layout of approximately fifteen feet within rows and twenty feet between rows. (The spacing between rows of plum trees is now about fifteen to twenty feet. Twenty- foot spacing was more common in the early twentieth century).

Related tasks:

- AG: Vegetation – Middle orchard – “Remove coast redwood grove”
- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”
- AG: Circulation – “Replace portion of southeast farm road”

Remove coast redwood grove.⁶⁷

The grove of nine coast redwoods does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is incompatible with the historic scene. There is no historic record

of this type of tree in this area. Donated by Jose Figuerado, they were planted in the late 1960s to screen the Franklin Creek culvert and act as a sound wall. Today, the nine closely-spaced trees are well over 100' tall. Although they visually screen the culvert, they cast dense shade over the middle orchard and partially interrupt an important view between the Muir House and the north slope of Mt. Wanda (Figure 2.2). The trees do little to negate the noise from the freeway. The trees should therefore be removed and not replaced. This area should be rehabilitated as part of plans for the middle orchard space and the Franklin Creek area.

Related tasks:

- AG: Vegetation – Middle orchard space – “Reestablish historic character of middle orchard”
- AG: Vegetation – Franklin Creek – “Retain and reestablish the historic character of Franklin Creek”
- AG: Buildings and structures – “Maintain, repair, and replace stabilization structures along Franklin Creek; paint culvert headwalls”

AG: VEGETATION – FISH POND SPACE

Reestablish historic character of fish pond space.⁶⁸

The orchard trees in the fish pond space do not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849-1914) and are incompatible with the historic scene. Historic photographs show the fish pond space as an open area defined by the densely vegetated banks of Franklin Creek on the west, the main farm road on the south, the carriage drive-loop on the east, and a low earthen berm on the north which protected peach trees in the north orchard (Figures 2.1, 2.6, 2.8, and 2.10). In the center of the space was the Franklin Creek Windmill and Well, which was surrounded by tall vegetation. For the most part, this natural low-lying area likely functioned as a dry pond that occasionally filled with water after heavy rains; however, there are no photographs that show water, or fish. By the end of the historic period, the Carriage House had been built at the southeast corner and the vegetation along Franklin Creek was taller than the vegetation around the windmill. Today, irregularly-spaced rows of pear, apricot, and almond trees fill the fish pond space and surround the reconstructed windmill and Carriage House. Tall trees still dominate the creek area, but the tall plants around the windmill are no longer present.

The pear, apricot, and almond trees should be removed to reestablish the open character of the fish pond space. Although historic photographs show it as a dry pond with a mostly bare earthen surface, maintaining similar

conditions today would be difficult and would likely create a great deal of dust on windy days. To minimize this condition, the park should consider planting a short grass in this area. The chosen species should be no more than a foot high so that the bowl- like earthform can be perceived. This type of plant material will visually contrast with the cover crop or bare ground in the adjacent orchard spaces. It is also favored over turfgrass or a covercrop because those types of vegetation were planted elsewhere on the site and doing so in this area might create a false impression to visitors. Rather, the short grass is a contemporary solution that will serve to link this natural space to the site's other natural feature, Franklin Creek, and the short grasses proposed along its banks. As such, selection of a short grass species should be made at the same time as plants for Franklin Creek are chosen.

To complete the historic scene, the missing vegetation shown around the windmill in historic photographs should be replaced. The exact type of vegetation is difficult to identify; however a similar form and scale can be found in giant reed (*Arundo donax*), which features spreading and ascending branches with long and narrow leaves. These plants should be installed around the base of the windmill, but as it is considered invasive and spreads rapidly, should not be allowed to grow any higher than the mid- point of the tower (which is about how tall the plants were in c.1914) or spread any farther into the fish pond space (see Figure 8.6 in Chapter 8, Volume 1).

Related tasks:

- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”
- AG: Vegetation – North orchard space – “Reestablish historic character of north orchard”

Retain and maintain quinces and fig.⁶⁹

The quinces and fig contribute to the significance of the park as character-defining vegetation features of the historic period (1849- 1914). In the 1880s, several quince and at least one fig were planted in a row on the north side of the main farm road next to the fish pond space (Figures 2.1 and 2.6). By c.1910, those closest to the Carriage House appear to be about ten feet tall (Figure 2.10). The gap in this line present today corresponds to an opening present during the historic period and should be retained. The plants themselves should be retained and maintained through a cyclical maintenance program, and propagated for future replacement.

AG: VEGETATION – NORTH ORCHARD SPACE**Reestablish historic character of north orchard.⁷⁰**

The peach trees in the north orchard do not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849-1914) but are compatible with the historic scene. The cherries, almonds, white mulberries, and carobs in the north orchard also do not contribute to the significance of the park as characteristic vegetation features of the historic period and are incompatible with the historic scene. According to photographs from c.1887 and c.1900-1905, peaches and apples were planted in this space (Figures 2.3 and 2.6). The trees were arranged in a grid that was oriented off the Muir Homestead's northeast fenceline, which is now a boundary line of the park (Figure 2.10). The cherries, almonds, white mulberries, and carobs have no historic precedence in this area. General recommendations and short- and long- term tasks are as follows:

- *General.* In keeping with early twentieth century orcharding practices, the number of varieties in the orchard should be kept to a minimum. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management Plan. Trees should be full size rather than semi- dwarf or semi- standard, and as they die they should be replaced in kind.
- *Short term.* Remove cherry, almond, white mulberry, and carob trees near the fish pond space.
- *Long term.* Replace the entire space with new peach trees. To allow for maintenance access, a minimum ten- foot wide open space should be left unplanted along the west and north edges of the orchard, paralleling the boundary fences. The peach trees should be arranged in an orthogonal layout of approximately fifteen feet within rows and twenty feet between rows. To avoid damaging the trees on the east end, the park may wish to postpone replacing the peach orchard until after the proposed Education and Visitor Center is constructed. Although apples appeared to be present in historic photographs on the lower east slope of this space, apples are instead proposed for the east orchard space where they have been confirmed in historic photographs to have existed.

Related tasks:

- AG: Vegetation – North orchard space – “Retain and replace incense cedars”
- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”
- AG: Vegetation – North- east boundary – “Remove coast redwood, California white oak, California black walnut, and coast live oak”

Retain and replace incense cedars.⁷¹

The seedling incense cedars at the far east edge of the north orchard space, paralleling the Visitor Center patio retaining wall, do not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but are compatible with the historic scene. Near the end of the historic period, there were two groups of two incense cedar trees along the Muir Homestead's eastern fenceline (Figures 2.3, 2.10, and 2.14). Today, there are two groups of three incense cedar seedlings planted near where the four historic trees were located. Four of these trees should be retained and maintained. In keeping with the historic locations of the trees, the middle seedling of each group should be removed and relocated to the plant propagation facility. The south seedling of the northern group should be replanted north of the northern seedling.

Related task:

- MH: Vegetation – North orchard space – “Reestablish historic character of north orchard”

AG: VEGETATION – EAST ORCHARD SPACE**Reestablish historic character of east orchard.⁷²**

The open field that comprises most of east orchard space, and present during the historic period, contributes to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914). The apple trees that comprise the east orchard space do not contribute to the significance of the park as characteristic vegetation features of the historic period but are generally compatible with the historic scene. The pepper tree does not contribute to the significance of the park as characteristic vegetation feature of the historic period and is incompatible with the historic scene.

Historic photographs show that the western edge of this flat field was variously delineated by the Alhambra windmill, plantings of incense cedars and apples, and the bottom of the knoll's east slope (Figures 2.3, 2.8, 2.9, 2.10, and 2.11). The field was planted in hay or other crops while apples trees were planted on portions of the east slope. The apples were generally oriented in a grid based on the field edge. There is no historic precedence for the pepper tree in this area.

The existing apple trees in the field should be removed, and the area should be replanted with a cover crop or another type of grass to restore the open field character. The apple orchard should be reconfigured so it more

accurately represents its historic location on the slope of the knoll. General recommendations and short- and long- term tasks are as follows:

- *General.* In keeping with early twentieth century orcharding practices, the number of varieties in the apple orchard should be kept to a minimum. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management Plan. Trees should be full size rather than semi- dwarf or semi- standard, and as they die they should be replaced in kind.
- *Short term.* Remove the pepper tree, and remove apples in the field and those on the east slope of the knoll that are tagged for removal on the plan. Plant new apple trees to fill up the space (generally from the toe of the slope to just below the Woodshed Road – as shown on the plan). Vinca planted in this area should be removed as appropriate. The apple trees should be spaced in a thirty by thirty square.
- *Long term.* Plant a cover crop in the field and grass on the remaining areas of the slope. The choice of groundcover should be consistent with recommendations in the Orchard Management Plan. The edge of the field line should extend from the southwest corner of the parking lot fence to the south- east boundary fence.

Related tasks:

- MH: Vegetation – East slope – “Reestablish historic character of east slope”
- AG: Vegetation – South- east boundary – “Remove coast redwood, coast live oak, California white oak, sweet cherry, cherry plum, pepper tree, and California black walnut; relocate incense cedars”
- VC: Circulation – “Circulation recommendations for the proposed Education and Visitor Center area”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”

AG: BUILDINGS AND STRUCTURES

Replace the Alhambra windmill.⁷³ (Figure 2.22)

The Alhambra windmill and well were constructed by c.1898 on the lower east slope of the knoll, northeast of the Muir House. Water extracted from this structure likely irrigated fields and served the house. The windmill was dismantled in the early 1960s prior to establishment of the park, but the well was retained and in 1989 improved to provide water for irrigation. Historic photographs show the wood tower from a distance and suggest it was similar in design to the Franklin Creek windmill and other windmills in the area (see Figure A4.10 in Appendix 4, Volume 1). These photographs, as well as an

NPS- produced drawing for the Franklin Creek Windmill, may provide enough information to create a historically accurate design.

The windmill was a vital component of the Strentzel- Muir Ranch and should be replaced and interpreted as one of several wells that were needed to serve the domestic and agricultural requirements of this large fruit ranch. The windmill will ably serve the park as another landmark structure clearly visible from Alhambra Avenue and State Route 4. Its presence will also reinforce the architectural theme of the proposed visitor center will gesture to a complex of late nineteenth century farm outbuildings.

Maintain, repair, and replace stabilization structures along Franklin Creek; paint culvert headwalls.⁷⁴

The culvert and stabilization structures along Franklin Creek do not contribute to the significance of the park as characteristic structures of the historic period (1849- 1914) and are incompatible features. However, given the peak stormwater flows that periodically emerge from the culvert under State Route 4, such structures are necessary to protect the stream banks of Franklin Creek and indeed the adjacent orchards and vineyards, Franklin Creek Bridge, Carriage House, and Franklin Creek Windmill and Well. The existing concrete filled sandbags appear to be functioning properly. It is critical, though, that their condition be regularly monitored, especially after storm events. In the event they need to be repaired or replaced, or a new structure of a different type needs to be installed, such work should be as sympathetic as possible to the historic agricultural character of this area.

The headwalls of the concrete culvert are somewhat visible from the southern sections of the middle and west orchards. The walls should be painted in the same color as the boundary fence – a flat dark brown – so that the structure better recedes into the landscape. This will be especially important when non- contributing plants are removed along and adjacent to Franklin Creek and the culvert becomes more visible.

Related tasks:

- AG: Buildings and Structures – “Remove or notch the check dam along Franklin Creek”
- AG: Vegetation – South- east boundary – “Remove coast redwood grove”

- AG: Vegetation – South- west boundary – “Remove coyote brush, coast live oak, almond, fig, California white oak, California black walnut, and coast redwood; remove railroad ties; relocate incense cedars and dwarf coyote brush”
- AG: Vegetation – Franklin Creek – “Reestablish historic character along Franklin Creek”

Remove or notch the check dam along Franklin Creek.⁷⁵

The check dam at the Franklin Creek Bridge does not contribute to the significance of the park as characteristic structure of the historic period (1849- 1914) and is an incompatible feature. This structure was not present during that time, and its original purpose to create a minimum pool depth in the creek is no longer functioning. Additionally, the top flat surface of the concrete structure is visible to visitors, most of whom pause at the Franklin Creek Bridge, and consequently detracts from the historic character. There are two alternatives possible for the dam:

- *Modify the dam.* Cut a series of notches in the top of the dam to partially restore a natural flow in the creek.
- *Remove the dam.* Remove the dam entirely to more fully restore a natural flow in the creek. Currently, the cyclone chainlink swing gates can be closed and secured into the top of the check dam. Although the gates are typically left open, a new means of closing and securing the gates will have to be considered if the park wishes to maintain this option with the gates.

Final decisions on this matter should be made in conjunction with proposed plans for restoring the historic character of Franklin Creek, and specifically, for establishing a healthy riparian environment to improve the health of the stream. This will require extensive consultations with natural resource specialists regarding the removal and planting of vegetation, the selection of appropriate plant species, and the phasing of the work to protect the stream. Other issues to be considered will be the sources and peak flows of stormwater runoff (especially from State Route 4) and the effects of future actions on downstream interests. Adjacent property owners and relevant local and state agencies will need to be involved as well.

Related tasks:

- AG: Buildings and Structures – “Maintain, repair, and replace stabilization structures along Franklin Creek”
- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”

TREATMENT TASK CONSIDERED AT THE AGRICULTURE AREA BUT NOT RECOMMENDED**Replace the Muir Homestead fence in the middle orchard.**

The 4.83- acre Muir Homestead parcel represented a land transfer from Wanda Muir to Helen Muir, and in 1912 it was transferred back to John Muir. Post and wire fencing delineated at least some portions of the parcel, and some of those boundaries correspond to the park's boundaries today. The missing section within the park boundaries would begin at the south- east boundary fence and extend north between the plum trees and grape vines in the middle orchard to the Carriage House, where it would then parallel the north side of the main farm road until heading northeast at the creek. The section of fence had more to do with ownership changes than it did with separating land uses, and as such the replacement of the fence is not recommended as it may cause confusion for the visiting public.

Replace pipe, catwalk across fish pond space.

An early photograph shows a pipe and catwalk oriented north- south spanning the fish pond space at the Franklin Creek Windmill and Well, and a later photograph shows what appears to be a second pipe oriented northeast- southwest from the windmill or Carriage House addition towards the north side of the main farm road (see Figure A4.11 in Appendix 4, Volume 1). The fate of the first pipe is not known in the later picture. The pipes were likely used for irrigation purposes, but the extent of the irrigation system is unknown. The park should conduct additional research on the historic irrigation system and what appears to be a sluice structure in Figure 2.1 before replacing any of the missing pipes.

TASKS FOR THE VISITOR CENTER AREA - (VC)**HISTORIC CHARACTER C.1914**

At the end of the historic period, this area was part of large hay field situated east of the Muir House. The character of the space completely changed by the early 1960s with the construction of the small one- story Martinez Animal Hospital and an asphalt parking lot off of Alhambra Avenue, which then became the park's Visitor Center and main entrance beginning in 1964. These features and uses, along with a portion of the boundary fence and a variety of non- contributing trees and shrubs, exist today. Future plans call for the construction of a new Education and Visitor Center. The 1991 GMP/EA designated this area as a park development zone. The following treatment tasks aim to accommodate

contemporary uses that are compatible yet distinct from the adjacent historic core in terms of design, scale, and materials.

VC: CIRCULATION

Circulation recommendations for the proposed Education and Visitor Center area.

The following recommendations are based on the completion of the proposed Education and Visitor Center. They are in response to site/floor plans dated October 29, 2002, and a later undated version delivered to the Olmsted Center on September 8, 2003.

- *Emergency and maintenance access to the fire lane.* The preliminary site plans recommend relocating the fire lane to a more northerly route that curves up the hill to connect to the lower end of the carriage drive- loop. This alignment is not recommended as it will encroach on the north orchard and thwart efforts to restore the character of that historic orchard space. The proposed route will necessarily require modification to the historic topography and areas of fill and cut, and will add another non- contributing feature in the historic landscape. Instead, the alignment of the existing fire road should be retained to avoid any additional land disturbing activities. Additionally, the existing route will provide a more direct route for emergency vehicles to the Muir House and interior areas of the park. The proposal to slightly turn the lower end of the fire lane to meet the relocated vehicular gate (which is just south of the existing gate) is acceptable as it should have no adverse affect.
- *Visitor access to the fire lane.* Visitors will enter the historic zone of the House Unit from the southwest doors of the auditorium building. Visitors should then use the existing fire lane or the easy access trail to reach the Muir House. No new paths or trails should be created in the north orchard space.
- *Courtyard and sidewalk pavement.* The courtyard space, as well as new and existing sidewalks around the proposed buildings and the parking lot, should have the same appearance as those proposed for the fire lane and easy access trail so that they appear as one system. This will create a consistent design vocabulary that clearly distinguishes the park's non- historic circulation features from the historic circulation features. Like those two features, the use of a bonded aggregate material or another technique that is appropriate to this location and setting should be considered.
- *Courtyard fence.* According to the drawings, the courtyard will be bounded on the north, east, and south by one- story buildings and open on the west side. A vernacular fence should be erected along the west edge of the space between the south and north buildings to prevent access into the north orchard space (especially during after- hours events) but still allow for views into the space. Historically, general area was part of the eastern boundary of the Muir Homestead and was marked by post and wire fencing. Such a fence would be inappropriate in this contemporary setting; however, a three board fence painted white, similar to the run of fence present along Franklin Canyon Road in c.1905, would serve this need well (Figure 2.18).

- *Parking lot.* Although not shown on the treatment plans, there have been suggestions to add five or six spaces to the south end of the existing parking lot. This addition would require relocation of the boundary fence southward and expansion into the park's historic zone. Assuming three ten-foot wide spaces are added on each side of the aisle, this addition could be upwards of thirty to forty feet into the adjacent east orchard space. Given the limited amount of historic fabric that remains from the Strentzel- Muir Ranch, any encroachment on the park's historic zones should be avoided. Overflow and bus parking can be better accommodated at the proposed parking lot near the Maintenance Building and would better justify that project and the redesign of the visitor entrance on the west side of the House Unit.

Related tasks:

- MH: Circulation – “Remove asphalt surface of the fire lane and replace with a compatible surface”
- MH: Circulation – “Remove asphalt surface of the easy access trail and replace with a compatible surface”
- MA: Circulation – “Improve pedestrian and maintenance access into the west side of the House Unit”
- AG: Vegetation – East orchard space – “Reestablish historic character in east orchard”

VC: VEGETATION

Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence.⁷⁶

The vegetation along the boundary fence, planted at various times during the NPS period, does not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) and is incompatible with the historic scene. This area marked the western side of the hayfield and historic photographs show minimal vegetation save for the tall incense cedars (see “north orchard space” discussions) (Figures 2.3, 2.9, 2.11, and 2.14). Although this area is now part of the park's development zone, the presence of the plants is misleading to the public and as such they should be removed. In addition, save for the apples and almonds, the current palette of vegetation comprised of California white oak, Siberian elm, cork oak, coast redwood, and coast live oak will eventually grow tall (the elm already has) and block the view between the Muir House and the Education and Visitor Center. These areas should be replanted with cover crop or grasses in conjunction with projects in the east orchard. On the parking lot side of the south fence, the coast live oak and incense cedar should be removed because they will also grow to be too tall.

Related tasks:

- AG: Vegetation – East orchard space – “Reestablish historic character in east orchard”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”

Planting recommendations for the proposed Education and Visitor Center area.

The following recommendations are based on the completion of the proposed Education and Visitor Center. Although landscape areas in around the proposed building and parking lot have not been determined, some general guidelines can be set forth:

- *Type of plants.* To retain views from the visitor center area to the Muir House and from the Muir House to the surrounding lands of the Alhambra Valley, plant types should be limited to turfgrass or cover crops, groundcovers, shrubs, and a limited use of small fruit trees in areas such as the courtyard. In general, plants should be maintained so that they grow no taller than the boundary fences or proposed buildings.
- *Plant palette.* Although this area was historically an open field, it is now part of a development zone and is the main entrance to the park. Therefore, it is important to create a favorable first impression to visitors. In keeping with the design theme of the proposed Education and Visitors Center – a complex of separate structures intended to resemble outbuildings on a late nineteenth century fruit ranch – the plant choices should gesture to vegetation that likely grew along Franklin Creek rather than the more ornamental plants that were present around the Muir House and to a lesser degree, the Martinez Adobe. Such a philosophy will also reinforce the uniqueness of the ornamental plants at the house and around the knoll compared to those elsewhere at the site. As such, plants chosen for this area should be the same as the grasses, shrubs, and small trees chosen for the Franklin Creek area. Taller shrubs and trees should not be used in this area. If turfgrass or cover crops are used, they should be consistent with the Orchard Management Plan and site- specific conditions along Alhambra Avenue.

Related task:

- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”

VC: BUILDINGS AND STRUCTURES**Building and structure recommendations for proposed Education and Visitor Center.**

The following recommendations are based on the completion of the proposed Education and Visitor Center. They are in response to site/floor

plans dated October 29, 2002, and a later undated version delivered to the Olmsted Center on September 8, 2003.

The proposed project is intended to evoke the appearance of typical outbuildings at a late nineteenth century fruit ranch. The complex will consist of three main buildings and a smaller building connected by a pergola. The structures will feature gabled roofs and board and batten siding. These design characteristics are critical for the new structure to be compatible with the adjacent historic setting. The treatment of the rooflines is especially important as they will comprise a key part of the views from the Muir House and knoll looking east and northeast.

In the plans, visitors will enter the historic area of the House Unit from the auditorium building. The orientation of this structure is skewed from the other proposed buildings so that an angled window on the southwest corner will frame a view of the Muir House up on the knoll. This visual connection is indeed important. However, to achieve the desired angle of view, the window opening itself should be the element that is skewed rather than the entire auditorium building. Instead, the auditorium building should be turned in a clockwise direction so that it shares the same orientation as the other two buildings as well as the smaller outbuilding and the trellis structure.

There are other justifications for reorienting the auditorium building so that it is aligned with the other buildings. First, although farm outbuildings were historically oriented in countless ways, a collection of them typically shared the same orientation as either the largest building or the building constructed first. Second, the overall layout of the Education and Visitor Center would be both strengthened and simplified. The design would appear more unified and would read much better as a representation of a complex of nineteenth-century farm structures, especially when viewed from the top of the knoll and perhaps from the slopes of Mt. Wanda.

Related tasks:

- AG: Buildings and structures – “Replace the Alhambra windmill”
- PW: Small scale features – Signs – “Interpretive signage recommendations”

TASKS FOR THE GRAVESITE UNIT – (GR)

HISTORIC CHARACTER C.1914

At the time of John Muir’s death in 1914, the family cemetery was tucked away alongside the banks of the Arroyo del Hambre in the corner of a large pear

orchard. The rectangular- shaped cemetery itself was enclosed by low granite coping, and along with Muir's headstone, featured the Strentzel family monument, Strentzel family markers, and the gravemarker for Muir's wife Louie. Although there is little historical information about the gravesite, this scene was likely one of quiet solitude. According to Helen Muir, there was grass growing around the graves as well as flowers and shrubs nearby, which may have included Cherokee roses. Elderberry and willow grew along the creekbank opposite the cemetery, and just to the north were incense cedar and a tall eucalyptus tree under which Muir's graveside service was reportedly held. The orchard was still producing pears at this time but apparently was not regularly maintained. The following treatment tasks aim to preserve and recover the historic character of the Gravesite character area.

GR: CIRCULATION

Survey Gravesite Unit; develop program for visitor and maintenance access.⁷⁷

(Figure 2.23)

The parking area and the entrance to the Gravesite Unit do not contribute to the significance of the park as a characteristic circulation feature of the historic period (1849- 1914) and are incompatible with the historic scene. A gravel section of Strentzel Lane connecting to the opening in the hedge that leads to the pear orchard and the cemetery serves as the drop off area for visitors escorted to the site in park vehicles.

The GMP/EA recommended a gated parking space for an NPS vehicle inside this area (see Figure 5.28 in Chapter 5, Volume 1). However, such a location would severely constrict access into the site if a vehicle was parked there, especially in an emergency situation. The plan eliminated an earlier proposal for a larger parking area because of opposition from adjacent residents. It was agreed that the park would generally consult with neighbors regarding use and development of the area and maintain the spirit of a low- key development approach.⁷⁸

The property owner to the west recently purchased Strentzel Lane from the Muir- Hanna Trust and has planted rows of olive trees that compromise access to the site. Some of the trees may be on park property, but the boundaries of the Gravesite Unit or Strentzel Lane are not clearly identified in the field. To address this issue, a survey should be conducted to determine the exact boundaries of the Gravesite Unit and the right- of- way of Strentzel Lane. After that is determined, plans should be developed to provide access into the site and possibly parking.

Related tasks:

- GR: Vegetation – “Stabilize plantings along the creek; replace Cherokee rose, elderberry, willow, and turfgrass; remove coast redwood; determine age and monitor coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays”
- PW: Small- scale features – fences and gates – “Install boundary fences at the Gravesite Unit”

GR: VEGETATION**Reestablish historic character of pear orchard.⁷⁹**

The pear trees in the large northern section of the Gravesite Unit contribute to the significance of the park as a character- defining vegetation feature of the historic period (1849- 1914). They are all that is left of a much larger orchard planted sometime after 1853 by Dr. Strentzel and later grafted by John Muir. The trees are in fair to good condition, but the readability of the orchard has diminished because of missing trees and the presence of non-orchard trees. Additional research will be needed to determine the history of the pears and peaches in the small southern section of the space.

There are enough original pear trees to reasonably reproduce a grid layout in the north section. The existing trees appear to be spaced in a twenty- five to thirty by twenty- five to thirty grid, although there are some variations. The layout is consistent with late nineteenth and early twentieth century practices. The grid also appears to align with Strentzel Lane, which in the 1939 aerial appears to be the location of the orchard’s west edge (Figure 2.24). General recommendations and short- and long- term tasks are as follows:

- *General.* Only Bartlett pears should be planted in this orchard. Tree trunks should be “headed low,” and the trees should be trained in either the “pyramidal (central leader) style” or “open bowl (vase) style.” These decisions, along with the final layout of the trees and type of cover crop, should be made in consultation with an Orchard Management Plan. Trees should be full size rather than semi- dwarf or semi- standard. As trees die, they should be replaced in kind.
- *Short term.* Preserve, stabilize, and maintain existing historic trees in north section and propagate them at the plant propagation facility at Golden Gate National Recreation Area or another appropriate venue. Remove non-orchard trees from the grid as shown on the plan. Determine ages of peach and pear trees in southern section of orchard; if they are historic they should be retained and if not they should be removed. Evaluate water supply at the gravesite for possible use when new trees are planted. The park should also partner with adjacent land owners to identify, protect, and sustain historic

pear trees that are not on park property but visible from the site so that the setting for the grave site can be enhanced.

- *Long term.* Transplant propagated historic trees to the orchard and fill in gaps in the grid as shown on the plan.

Retain and maintain eucalyptus; determine age of incense cedar, sweetgum, pomegranate, and California bay.⁸⁰

The eucalyptus tree contributes to the significance of the park as a character- defining vegetation feature of the historic period (1849- 1914). The incense cedar was probably planted around the same time, but additional research and field analysis will be needed to determine the history of this tree. The eucalyptus was planted by Dr. Strentzel prior to 1890 and was likely the tree Muir admired when Dr. Strentzel was buried at the cemetery. Today, it may be well over 200' tall and the incense cedar upwards of 100' tall. The two trees are part of a linear mass of vegetation that includes a tall sweetgum, a large pomegranate, and a California bay.

The eucalyptus should be retained and maintained through a cyclical maintenance program, and the tree should be propagated for future replacement. The incense cedar, sweetgum, pomegranate, and California bay may be historic and should be core dated; they should be removed if it is determined they do not date to the historic period.

Stabilize plantings along the creek; replace Cherokee rose, elderberry, willow, and turfgrass; remove coast redwood; determine age and monitor coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays.⁸¹

The buckeyes along the creek do not contribute to the significance of the park as a characteristic vegetation feature of the historic period (1849- 1914) but are compatible with the historic scene. Buckeyes reportedly grew in this area during the historic period. Additional research and field study will be needed to determine the presence of Ponderosa pine, eucalyptus, sycamore, hawthorn, California bay, coast live oaks, incense cedars, coast redwoods, and vinca during the historic period. The Cherokee roses that were planted in the vicinity of the grave markers by John Muir, the turfgrass around the graves, nor the elderberry and willow remembered by Muir's daughter Helen are no longer present.

The most important goal in this area is to stabilize the streambanks of the Arroyo del Hambre in order to protect the cemetery, which is situated just above the west bank. Hydrologist Richard Inglis, in his 2002 report "Stability

of Alhambra Creek at the John Muir Gravesite,” recommended planting additional trees to establish a firm root mass, which will help minimize bank erosion. One particular strategy included planting two or three parallel rows of plants so that the root systems are essentially tied together. Inglis noted that actions on the park side of the creek (west side) would need to be duplicated on the private side (east side) of the creek. In addition, careful monitoring of the effectiveness of these actions would be required and more complex solutions may be needed.⁸²

Although reestablishment of the historic character of the creek is desirable, no known photographic documentation exists to offer guidance. More than likely, the streambanks were vegetated with a variety of trees, shrubs, and groundcovers. Historic references in Part One of the CLR: Site History, mentions the presence of buckeye, willow, and elderberry along the creekbanks. The gravesite itself was apparently maintained, and there are references of Cherokee rose and grass in this vicinity. All of these plants should be used if possible. However, the decisions regarding appropriate trees, shrubs, and grasses should be made by natural resource specialists, as should guidance regarding the removal and planting of vegetation and the phasing of the work to protect the stream. Other issues to consider include stormwater flows in the creek and from the surrounding residential area, the effects of replanting efforts on downstream interests, and screening off site and incompatible land uses. Adjacent property owners and relevant local and state agencies will need to be involved in this planning effort.

The following steps can guide the selection of an appropriate plant palette:

- *Step One.* In the best case scenario, select plants that were either historically present along the creek or were known to have existed in the Alhambra Valley. If that is not possible, choose plants that resemble the character of plants present during the historic period and will achieve the desired historic character.
- *Step Two.* The plants chosen in Step One should be evaluated for their effectiveness in stabilizing the streambanks and protecting the gravesite, and their potential contribution to the health of the stream corridor. Plants that are considered invasive species should not be installed. All native plants should be collected locally and not purchased using commercial stock, (which could affect the genotypes in adjacent areas).⁸³

In particular, the coast redwood west of the cemetery gate entrance is severely crowding the adjacent trees and should be removed. The park should also determine the age of the coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays encircling the cemetery fence. If they are not historic, they should be removed. Specimens nearest the

gravemarkers and granite enclosure/fence should be monitored so that their roots do not disturb these structures.

Related tasks:

- GR: Circulation – “Survey Gravesite Unit; develop program for visitor and maintenance access”
- PW: Small- scale features – fences and gates – “Install boundary fences at the Gravesite Unit”

GR: BUILDINGS AND STRUCTURES

Preserve, stabilize, and repair the grave markers and granite enclosure.⁸⁴

The gravemarkers of John Muir and Louie Strentzel Muir, the Strentzel family gravemarkers and family monument, the gravemarkers of Wanda Muir Hanna and Tom Hanna, and the granite enclosure contribute to the significance of the park as character- defining structures of the historic period (1849- 1914). The headstones of John Muir and Louie Strentzel Muir are leaning slightly and should be straightened. Some joints on the granite enclosure are in need of new mortar. Possible settling of the granite coping and the fence should be periodically checked. Erosion on the steep bank separating the cemetery from the creek should also be closely monitored, especially after storm events.

TREATMENT TASKS CONSIDERED AT THE GRAVESITE BUT NOT RECOMMENDED

Construct a trail from Strentzel Lane to the gravesite.

Although the GMP/EA advocated for development of a trail from the entrance area and through the orchards to the cemetery, such a project is not recommended. The quiet and remote setting of this site – and the sense of discovery that one gets when finding the tiny cemetery next to the creek – is one of its most important qualities. As such, development of a defined trail is discouraged. This would be in keeping with the low- key development approach of the site as recommended in the GMP/EA. However, if visitation increases dramatically, a trail could be considered as long as it is designed to be compatible with the historic scene.

TASKS FOR THE MT. WANDA UNIT – (WA)

HISTORIC CHARACTER C.1914

At the end of the historic period, Mt. Wanda was characterized by steep forested hillsides and draws and hilly open areas of grasslands and small orchards. The landform offered views of the core of the Strentzel- Muir Ranch below as well as

panoramic of the orchards and valleys filling the Alhambra Valley, and town of Martinez and the Straits of Carquinez to the north, Mt. Diablo to the east, and on the clearest of days the distant ranges of the Sierras. Muir and his daughters, friends, and visitors often ventured to the nearby mountain to admire these views and observe the rich variety of plant and animal life. Muir purposely left the land undisturbed, save for some grazing of livestock by his son-in-law, Tom Hanna. Fortunately, the topographic conditions saved the mountain from the suburban development that ultimately replaced the agricultural land uses in the valley, and today the mosaic of forests and grasslands remains. The following treatment tasks aim to preserve the historic character of the Mt. Wanda character area.

WA: VEGETATION

Retain, maintain, and monitor pattern of woodlands and grasslands.⁸⁵

Woodlands and grasslands contribute to the significance of the park as character-defining vegetation features of the historic period (1849-1914). This mosaic pattern was present throughout the historic period and remains today. Grasslands make up approximately one-third of Mt. Wanda with the balance comprised of woodlands (blue oak woodlands, mixed evergreen forest, and chaparral).

The following recommendations draw heavily on those proposed in the 2002 Jepsen and Murdoch study, “Inventory of Native and Non Native Vegetation on John Muir National Historic Site, Eugene O’Neill National Historic Site, and Port Chicago National Monument.” The guidelines are broad but will begin to help preserve and maintain the mosaic pattern of woodlands and grasslands that Muir and his family admired.

- *General.* The current ratio of grasslands and woodlands should be maintained. Although the percentages from the historic period are not known, the current ratio was probably similar in the historic period due to the mountain’s topography and will preserve the woodland and grassland mosaic.
- *North and east slopes.* Jepsen and Murdock described these steep slopes of blue oak woodlands and chaparral as “wild lands” that should remain limited to access because of the rich diversity of plants (including the Mt. Diablo sunflower) and animal habitat. They also noted the importance of managing the Sudden Oak Death disease in the woodland.⁸⁶ As the north slope is a key component of the southern and southwestern views from the House Unit and is the primary reason why the Mt. Wanda property was acquired, the park should closely monitor this potentially devastating disease to preserve the historic scene. The existing nature trail loop as well as the BN- SF railroad right-of-way and the city tract at the bottom of the slope should provide good access for monitoring activities.

- *Top and southern slopes.* Open grassland areas are dominated by non- native, annual grasses with dense patches of yellow star thistle, Italian thistle, milk thistle, and black mustard. In recognizing the challenge of managing the grasslands, Jepsen and Murdock generally favored an intensive management regime of prescribed burns combined with grazing and selective weeding. Although development of such a plan is beyond the scope of this report, Table 2.1 that follows summarizes some of the potential issues discussed in Jepsen and Murdoch’s report as well as by regional park staff and participants in the park’s 2003 treatment charette. A separate report should explore these options in more depth and determine the feasibility of reintroducing native grasses to the landscape.

Method	Possible Advantages	Possible Disadvantages
Fire	<ul style="list-style-type: none"> - Reduces the non- native seed bed - Keeps fuel loads down - Prevents growth of woody vegetation to help maintain current acreage of woodlands and grasslands - Most ecologically effective 	<ul style="list-style-type: none"> - Liability - May strain relationships with neighbors - Lengthy and complicated review process
Grazing	<ul style="list-style-type: none"> - Grazing occurred here during the historic period - Can limit succession of grassland to woodland because cattle eat seedlings before they can get established - Cattle can keep grasses and brush low, thus reducing fire hazards - Use in support of fire management work - Use of goats at East Bay Regional Park has been effective 	<ul style="list-style-type: none"> - May strain relationships with neighbors - Will require development of grazing management plan to determine where grazing and staging areas should occur - Efforts to install secure cattle fences may be substantial
Weeding	<ul style="list-style-type: none"> - Effective if well- timed - Mechanical thinning may speed process 	<ul style="list-style-type: none"> - Hand weeding can be time consuming - Mechanical thinning difficult on steep and erodible slopes

Consider replacing eucalyptus trees at proposed parking lot.⁸⁷

The two eucalyptus trees contribute to the significance of the park as character- defining vegetation features of the historic period (1849- 1914). A planting of eucalyptus trees on the Redfern Place was referenced in 1877 diary entry by Mrs. Strentzel. They are likely part of a mass that appears in a historic photograph from the late 1890s. The trees today are some of the tallest in the park.

Current plans for this area propose removing the trees for construction of the park’s second parking lot. A “Technical Assistance Report” produced by the Olmsted Center for Landscape Preservation in 2002 noted that the GMP/EA recommended retaining large existing trees on this tract unless determined to be hazardous. The technical report recommended consultations with an arborist to determine their age, condition, and anticipated health if surrounded by a parking lot and proposed an alternative layout that preserves the trees in a protected island (see Figure 5.35 in Chapter 5, Volume 1). An arborist had evaluated the tree and determined the

tree to be healthy. However, the trees are slated for removal for the parking lot.

The current trees are the Blue Gum cultivar of *Eucalyptus globulus*. If an opportunity arises at some point that allows for the replacement of the trees, a species that is less invasive should be considered. One of the species Muir is known to have planted could be considered, as could one with similar form and character. Golden Gate NRA is conducting extensive research into developing a suitable replacement for the *E. globulus* for this and other reasons.⁸⁸

Determine history and condition of the walnut trees.⁸⁹

The significance of the California black walnut and English walnut trees on the lower north slopes of Mt. Wanda has not been determined due to the lack of historical documentation (Figure 2.25). Recommended short- and long- term actions are as follows:

- *Short term.* Propagate trees that have a diameter greater than eight inches. Such trees may be historic if they are this size.
- *Long term.* Undertake efforts to assess the condition of the trees and determine their age and history to better inform future management decisions. If it is determined that they are historic, efforts need to be made quickly to stabilize and maintain them as they likely have not been maintained in some time. Issues to consider in the future will include the future health of the trees, the feasibility and value of maintaining the orchard and supplying water to new trees if needed, and overall vegetation management plans for Mt. Wanda. The California black walnut are listed as “species of concern” by the US Fish and Wildlife Service.⁹⁰

Retain and maintain apricot orchard.⁹¹

The apricot trees contribute to the significance of the park as character-defining vegetation features of the historic period (1849- 1914). Although details regarding this orchard during the historic period are not known, hillside plantings of fruit trees were common during the late nineteenth and early twentieth centuries (Figure 2.24). These apricots likely date to Dr. Strentzel’s ownership of the land in the 1880s. Additionally, this orchard, along with the pear orchard at the Gravesite Unit, represents the last vestige of known original orchard trees in the park. Only a few trees remain today and they are currently not maintained. Their poor condition warrants immediate short term actions and long term considerations:

- *Short term.* The following actions should be implemented as soon as possible:
 - The park should immediately propagate these trees before their condition deteriorates any further. In the future, these trees could also be used for replacement of the apricots in the west orchard space.
 - The trees should be dated to determine their age. The park should also conduct more research of this orchard to determine its history and significance and guide future planning decisions (the GMP/EA does not offer specifics regarding the apricot trees).
- *Long term.* There are several long- term options regarding the apricot trees:
 - Allow the orchard to decline. Once the short term actions are complete, allow the orchard to continue to deteriorate.
 - Reestablish the historic character of the orchard. Preserve, stabilize, and protect the existing trees. Distinct northeast- southwest- orientated rows visible in the 1939 aerial photograph may provide enough information to replace in kind missing plants and reestablish conditions that may have been present in the historic period. Although apricots clearly thrive in a relentless sun- exposed environment such as this, new trees will nonetheless require a reliable water source, especially in their early years. Pursuance of this option should also consider potential benefits associated with acquisition and use of the Strain Ranch in 2012 and compatibility with vegetation management goals of the surrounding woodlands and grasslands.

Determine history and condition of the olive trees.⁹²

The significance of the olive orchard south of the Strain Ranch has not been determined due to inadequate documentation. Distinct east- west- orientated rows are visible in the 1939 aerial but no other information is available (Figure 2.24). According to the 2002 vegetation inventory by Jepsen and Murdock, the olives are of serious concern as they are spreading into the adjacent mixed evergreen forest on the hillside below and will soon out- compete all other plants in that area. They recommend hand- removing the easily identifiable seedlings and saplings.⁹³

- *Short term.* Propagate trees that have a diameter greater than eight inches. Such trees may be historic if they are this size.
- *Long term.* The park should make plans to determine the age and history of this orchard to aid so that an appropriate course of action can be determined (the GMP/EA does not offer specific guidance regarding these trees). Issues to consider in the future will include the condition of the trees, the feasibility and value of maintaining the orchard and supplying water to new trees if needed, vegetative management plans for the woodlands and grasslands on Mt. Wanda, and future plans for the Strain Ranch area.

TASKS FOR PARK-WIDE SMALL-SCALE FEATURES – (PW)**PW: SMALL-SCALE FEATURES – FENCES AND GATES****Alter the existing boundary fences and gates, and oil valves fence at the House Unit.⁹⁴ (Figure 2.26)**

The boundary fences at the House Unit do not contribute to the significance of the park as a characteristic small-scale feature of the historic period (1849- 1914). Historic photographs show that several fence types were used within and around the Redfern Place during the historic period, mostly along roads and/or property lines. In the Franklin Canyon Road area, a picket fence and gate was situated along the east side of the road at the Martinez Adobe while sections of three-board and barbed wire fencing were located on the other side of the road. After the Muir Homestead parcel was established in 1908, post and wire fencing was set out on at least some portions of that property, namely the southeast, south, and part of the west sides. Although these actual fences are no longer extant today, their locations generally correspond to the park's west boundary fence, northwest boundary fence, fence along Franklin Creek north of the main farm road, north-east boundary fence, and the fence on the west side of the parking lot.

The boundaries of the House Unit are delineated by six to seven-foot-tall sections of cyclone chainlink fencing, most of which include vertical pickets to screen the view. The fences are in good condition and provide an appropriate level of protection and security in the suburban setting, and should therefore be retained. Replacing these fences with vernacular-styled fencing reminiscent of the historic period is not recommended because: 1) such a fence, if truly designed in the vernacular style, would not be tall enough nor have a design that would provide the necessary level of security to protect the historic resources within the park, and 2) such vernacular fences would create a false historical appearance that could be misinterpreted by the public. Installation of vernacular fencing in front of contemporary fencing in areas where historic fencelines were located is also discouraged as there is not enough reliable information to accurately replace these missing features.

Although the boundary fence is obviously not a historic feature, it nonetheless is part of the evolution and reality of this site, and great efforts should not be directed toward screening the fence and the adjacent land uses. That said, however, the appearance of the boundary fence is variable and at times distracting. The following tasks should be implemented to

create a unified appearance so that this contemporary feature does not unnecessarily detract from the historic scene:

- Repair and/or replace broken and missing vertical pickets with wood pickets.
- Install pickets in sections that have none. Exceptions to this include the south- west boundary fence from Franklin Creek to the California State Riding and Hiking Trail (which is obscured by vegetation) and the gate and two diagonal sections of cyclone chainlink fence at Franklin Creek (which will preserve views downstream from the bridge).
- Paint all pickets, posts, braces, and extension arms a flat dark brown color so that the fence appears to recede into the landscape. Another option may be to replace the fence with a vinyl coated wire fence colored brown or black.

Replace the two-rail board fence on the east side of carriage drive-loop/Woodshed Road.⁹⁵

A three- rail board fence was erected on the east side of the carriage drive-loop sometime between 1882, when the Muir House and drive were completed, and c.1886. The fence appeared to be about four feet tall and extended toward the east driveway. A two- board fence appears in approximately the same location in a c.1900- 1905 photograph, and the top of a fence, whether two- or three- board is unclear, is visible in a photograph from c.1914 (see Figure A4.12 in Appendix 4, Volume 1). It is not known if the fence was painted.

As the two- board fence is present at a later date in the historic period, it should be replaced to restore the historic character. Although the historic end points of the fence are not known, the feature, along with roses and possibly hollyhocks, likely marked the transition from the gently sloped area of the carriage drive- loop and the steep east slope of the knoll below. Since the landform has not appreciably changed since the historic period, the current topographic characteristics can help determine where the fence should be located. As such, the north end should begin between the fire lane and the lower end of the center island; the south end should be located near the junction of the Woodshed Road and the easy access trail. The fence should be unpainted and be set back from the edge of the roads by about a foot.

Related task:

- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings on east side of loop”

Install boundary fences at the Gravesite Unit.⁹⁶

The 1980 Draft Feasibility Report for the Gravesite recommended installing boundary fencing for security purposes and possibly removing the fence around the grave markers to restore the scene to a more authentic condition.⁹⁷ Security issues have not been a serious problem, likely because the most sensitive features, the gravemarkers, are fenced and secured. However, it is recommended that this fence remain. The design, materials, and scale of the fence are compatible with the cemetery setting.

Boundaries of the Gravesite Unit are not currently delineated by any fencing, and as a result there have been some incidents of encroachment through the planting of a vegetable garden on the south side of the site, installation of a fence on the north side, incidents of after hours use, and most recently planting of olive trees near the entrance. Previous reports and drawings of the Gravesite Unit also offer differing configurations of the property lines. To discourage these incidents and end confusion, the park should survey the site and physically mark the boundaries so that the resources within the park can be properly preserved and maintained.

To maintain the spirit of a low- key development approach as recommended in the park's GMP/EA, the park should install a vernacular- style fence that is in keeping with the historic setting but at the same time clearly marks the boundaries of the site. Regrettably, there are no historic photographs of this area. However, three and four board fences, picket fences, and post and wire fences were historically used at the Redfern Place. Of these types, post and wire fencing would be the most appropriate for the following reasons: 1) such a fence would generally be unobtrusive in the landscape and support the low- key development approach, 2) at the same time, it would clearly delineate the park's property and possibly resolve some of the issues noted above; 3) the fence would offer views into and out of the site and still allow adjacent neighbors to keep an eye on the area.

The fence should consist of three or four strands of smooth (not barbed) wire attached to four feet high unpainted wooden posts set in concrete and spaced about eight feet apart. Results from the survey will determine if the eastern property line can be marked (it may be in the creek). If this is the case, an alternative would be to erect a fence along the top of the embankment (which may be beneficial from a safety standpoint given the steep slopes and proposed bank stabilization projects). Then, the northern and southern fencelines could extend to the top edge of the embankment. As with the all projects at the Gravesite Unit, the park should consult with neighbors regarding this project.

Related tasks:

- GR: Circulation – “Survey Gravesite Unit; develop program for visitor and maintenance access”
- GR: Vegetation – “Stabilize plantings along the creek; replace Cherokee rose, elderberry, willow, and turfgrass; remove coast redwood; determine age and monitor coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays”

PW: SMALL-SCALE FEATURES – SIGNS**Interpretive signage recommendations throughout the park.**

Waysides, kiosks, and marker signs throughout the park do not contribute to the significance of the park as characteristic small- scale features of the historic period (1849- 1914). They are, however, an important part of the park’s mission to interpret the life of John Muir at the fruit ranch. The following recommendations consider the design and placement of existing and future interpretive signs and markers, and should be considered when the park revises its interpretive plan:

- *Interpretive panels.* Limit the uses of the screen- printed and fiberglass panels to the park’s development zones as designated in the GMP/EA. These zones are currently located at the entrance to the gravesite, the Visitor Center, and the ramada and main farm road gate area. However, as the ramada is recommended for removal and the area will be replanted, and the existing pedestrian gate along Canyon Way is to be relocated along the tunnel trail, no signs should be located in this area.

The interpretive panels are an effective way to provide an overview of Muir and his time at the fruit ranch to visitors who are about to enter the historic zone. The wood frames should match the siding materials used on the proposed Education and Visitor Center. To minimize the addition of obtrusive non- historic features in the historic landscape, these signs should not be used in the historic zone. However, the park could be justified in making an exception to this guidance at the new pedestrian gate at the tunnel trail.

- *Marker posts.* The numbered posts throughout the House Unit and along the nature trail on Mt. Wanda should be retained and maintained. These markers are keyed to an interpretive brochure and are an effective way to convey information about the site. Their natural wood color and slender design are unobtrusive and appropriate in the historic setting. Such markers can also be developed for the Gravesite Unit.
- *Kiosks.* The wood kiosks at Mt. Wanda should be retained as they provide important information for visitors about trail and fire conditions and other rules and regulations. Their designs are compatible with the historic scene. The GMP/EA designated a small development zone at the main farm road gate at Canyon Way for a kiosk. However, given the plans for moving the pedestrian gate to the tunnel trail and the recommendation to remove the

ramada, no kiosk should be constructed in this area. As with the interpretive panels, the park could consider a kiosk at the new pedestrian gate.

Related tasks:

- AG: Vegetation – West orchard space – “Reestablish historic character of west orchard”
- VC: Buildings and structures – “Building and structure recommendations for the proposed Education and Visitor Center”

PW: SMALL-SCALE FEATURES – BENCHES

Bench recommendations throughout the park. (Figures 2.27 and 2.28)

The benches throughout the park do not contribute to the significance of the park as characteristic small- scale features of the historic period (1849- 1914). The wood benches are currently constructed in a variety of styles and dimensions. Of the many variations, the preferred bench designs, with and without backs, are currently located within the House Unit: under the redwood grove along Franklin Creek, northeast of the Martinez Adobe on the main farm road, and at the bottom of the carriage drive- loop next to the bent California fan palm. General recommendations for benches are as follows:

- *Materials and design.* The preferred benches are secured into the ground and consist of dimensional lumber fastened together with carriage bolts. Three planks comprise the seats and two planks comprise the backs. When the other benches in the park are in need of replacement, they should be replaced with this design so that they convey a consistent appearance. Bench designs should be the same in both the development and historic zones.
- *Locations.* It is ultimately the park’s decision as to where to locate benches. However, the locations should consider the interpretive plan and other visitor needs. In general, benches should be placed in inconspicuous locations and avoid open areas. In particular, benches with backs should be limited to perimeter areas or next to buildings or structures so they can provide outward views. If benches are placed in a more conspicuous area, such as along the carriage drive- loop, they should be backless so they appear less conspicuous.

PW: SMALL SCALE FEATURES – MISCELLANEOUS

Remove and relocate picnic tables and grill in the west orchard.⁹⁸

The picnic tables and grill do not contribute to the significance of the park as characteristic small- scale features of the historic period (1849- 1914) and are incompatible. Four tables as well as a grill are located in the middle of the west orchard under the two pecan trees. They are most often used by visiting school groups. However, the presence of the tables and grills and the foot traffic they attract compacts the soil around the adjacent fruit trees and

increases the likelihood of damaging the branches. The tables and grill also interrupt the rhythm of the orchard rows.

The four tables and grill should be moved to the west section of the west orchard space, just south of the Martinez Adobe. This area will still allow for good views and access into the west orchard space and will also lessen the chances of damaging and stressing the fruit trees. In the short term, the area will be partially shaded by the Deodar cedar trees and in the long term by new pecan trees. Picnic tables north of the Visitor Center will need to be removed or moved when the new building project begins. They could be used in the courtyard of the new building.

Related task:

- AG: Vegetation – West orchard space – “Reestablish historic character of west orchard”

Relocate or remove the beehive oven.⁹⁹

The beehive oven does not contribute to the significance of the park as a characteristic small- scale feature of the historic period (1849- 1914). It was constructed south of the Martinez Adobe in 1992 for use by the Environmental Education Program and is in good condition. The park should consider two options:

- Relocate the oven to the development zone on the west side of the Martinez Adobe. Although there are no historical references for this type of feature at the adobe, in the nineteenth century beehive ovens were often attached to dwellings or situated very close to them.
- Remove the oven. The park should evaluate how often the oven is used today and whether it fits into future interpretive plans. The structure is located in a somewhat remote part of the park and is not particularly distracting. It is possible that its use may increase when the picnic area and grill are relocated to this area.

Trash receptacle recommendations throughout the park. (Appendix 2)

The trash receptacles do not contribute to the significance of the park as characteristic small- scale features of the historic period (1849- 1914). However, they are a necessary part of park operations. Several are currently located at the Visitor Center patio and in other locations, and are inserted in square wooden containers that serve as a cover to prevent waterlogging and also soften their appearance in the landscape. These design characteristics should be continued so that all trash receptacles are consistent throughout the park. When the proposed Education and Visitor Center is completed, the park should consider the following:

- *Materials and design.* Clad existing and new receptacles in wood that matches the siding used on the building. Include covers to prevent waterlogging and adding weight to the debris.
- *Locations.* To minimize the addition of obtrusive non- historic features in the historic landscape, siting of receptacles should be limited to major visitor use entrance areas such as at the Visitor Center and parking lot, west pedestrian gate, the park and ride lot and the planned secondary parking lot at Mt. Wanda, and the entrance to the Gravesite Unit. They should be located near areas that facilitate removal by maintenance personnel. Temporary trash receptacles should be added during school group visits and special events as needed.

Security light recommendations throughout the park. (Appendix 2)

The security light does not contribute to the significance of the park as characteristic small- scale features of the historic period (1849- 1914). It is attached to a black- painted pole northeast of the Muir House at the top of the carriage drive- loop. Like benches, trash receptacles, and security fences, they are necessary features in a park landscape. However, several considerations can ensure that security lights are unnoticed by most visitors:

- *Materials and design.* Select fixtures that are painted a dark, flat color so that they blend into the landscape. Select poles that are round rather than square so they do not stand out and also paint them a dark, flat color. The park should consider the benefits of installing motion detectors or motion sensors.
- *Locations.* The park should consult with local fire and police officials to determine the best locations for these features.

ENDNOTES FOR CHAPTER TWO

¹ Living specimens are those grown in a nursery setting. Germplasm is single- celled meristematic tissue cryogenically conserved. From review notes of Susan Dolan, 2 December 2004, of 75% Draft of Treatment Plan.

² Circulation – Repair historic features and materials and Replace deteriorated historic materials and features. From National Park Service, *The Secretary of Interior’s Guidelines for the Treatment of Historic Properties with Guidelines for Treatment of Historic Landscapes* (hereafter cited as “*Guidelines*”), Washington DC: US Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative, 1996: 69, 71.

³ Circulation – Repair historic features and materials and Replace deteriorated historic materials and features. *Guidelines*, 1996: 69, 71.

⁴ Circulation – Repair historic materials and features. *Guidelines*, 1996: 69.

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- ⁵ Circulation – Protect and maintain historic features and materials and Replace deteriorated historic materials and features. *Guidelines*, 1996: 71.
- ⁶ Circulation – Design for the replacement of missing historic features and Replace deteriorated historic materials and features. *Guidelines*, 1996: 71.
- ⁷ Circulation – Alterations/additions for the new use. *Guidelines*, 1996: 71.
- ⁸ Ibid.
- ⁹ Circulation – Replace deteriorated historic materials and features. *Guidelines*, 1996: 71.
- ¹⁰ Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 63.
- ¹¹ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.
- ¹² Ibid.
- ¹³ Vegetation – Replace deteriorated historic materials and features. *Guidelines*, 1996: 66.
- ¹⁴ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.
- ¹⁵ Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; and Design for the replacement of missing historic features. *Guidelines*, 1996: 63- 64, 66.
- ¹⁶ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.
- ¹⁷ Vegetation – Design for the replacement of missing historic features. *Guidelines*, 1996: 63- 64, 66.
- ¹⁸ Ibid.
- ¹⁹ Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; and Design for the replacement of missing historic features. *Guidelines*, 1996: 63- 64, 66.
- ²⁰ Telephone conversation with Kimball Koch, 2 September 2003.
- ²¹ According to *Sunset Western Garden Book*, the dividing line between old and modern roses is 1867. Tea roses are considered old roses while hybrid tea roses are considered new roses. As the Muir House was built in 1880/81, these tea roses may have been hybrid tea roses. From *Sunset Western Garden Book*. Menlo Park, CA: Sunset Publishing Company, 1996: 465- 466.
- ²² James K. Agee, “Historic Trees of John Muir National Historic Site.” San Francisco, CA: US Department of Interior, National Park Service, Western Regional Office, March 1978: 26.
- ²³ Vegetation – Alterations/additions for the new use. *Guidelines*, 1996: 66.
- ²⁴ General – Design for the replacement of missing historic features and Alterations/additions for the new use. *Guidelines*, 1996: 52- 53.

- ²⁵ Vegetation – Design for the replacement of missing historic features. *Guidelines*, 1996: 66.
- ²⁶ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.
- ²⁷ Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 63.
- ²⁸ Vegetation – Protect and maintain historic features and materials and Design for the replacement of missing historic features. *Guidelines*, 1996: 66.
- ²⁹ General – Alterations/additions for the new use. *Guidelines*, 1996: 53.
- ³⁰ Ibid.
- ³¹ Vegetation – Protect and maintain historic features and materials and Design for the replacement of missing historic features. *Guidelines*, 1996: 66.
- ³² Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 63.
- ³³ Vegetation – Protect and maintain historic features and materials. *Guidelines*, 1996: 66.
- ³⁴ General – Alterations/additions for the new use. *Guidelines*, 1996: 53.
- ³⁵ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.
- ³⁶ Notes from Faire S. Sax when visiting Helen Muir at her home in Spokane in 1958. Transcribed by Hussey, April 1965. Copy in JOMU files, Park Maintenance Binder 1.
- ³⁷ Structures, Furnishings, and Objects – Identify, retain, and preserve historic features and materials; Repair historic features and materials; and Replace deteriorated historic materials and features. *Guidelines*, 1996: 79, 81.
- ³⁸ Structures, Furnishings, and Objects – Design for the replacement of missing historic features. *Guidelines*, 1996: 81.
- ³⁹ Circulation – Replace deteriorated historic materials and features. *Guidelines*, 1996: 71.
- ⁴⁰ Circulation – Alterations/additions for the new use. *Guidelines*, 1996: 71.
- ⁴¹ National Park Service, “Environmental Assessment for the John Muir National Historic Site Improvements Project.” Final Report, 29 September 2004: 4.
- ⁴² Ibid., 12.
- ⁴³ General – Alterations/additions for the new use; Vegetation – Identify, retain, and preserve historic features and materials and Design for the replacement of missing historic features. *Guidelines*, 1996: 53, 63, 66.
- ⁴⁴ General – Alterations/additions for the new use; Vegetation – Design for the replacement of missing historic features. *Guidelines*, 1996: 53, 66.
- ⁴⁵ Ibid.
- ⁴⁶ Ibid.
- ⁴⁷ Ibid.
- ⁴⁸ General – Alterations/additions for the new use. *Guidelines*, 1996: 53.

⁴⁹ Structures, Furnishings, and Objects – Design for the replacement of missing historic features. *Guidelines*, 1996: 81.

⁵⁰ Ibid.

⁵¹ Circulation – Replace deteriorated historic materials and features. *Guidelines*, 1996: 71.

⁵² Circulation – Design for the replacement of missing historic features. *Guidelines*, 1996: 71.

⁵³ General – Alterations/additions for the new use; Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; and Design for the replacement of missing historic features. *Guidelines*, 1996: 53, 63- 64, 66

⁵⁴ General – Alterations/additions for the new use; Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 53, 63.

⁵⁵ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. *Guidelines*, 1996: 63- 64.

⁵⁶ Ibid.

⁵⁷ General – Alterations/additions for the new use; Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 53, 63.

⁵⁸ General – Alterations/additions for the new use. *Guidelines*, 1996: 53.

⁵⁹ General – Alterations/additions for the new use; Vegetation – Protect and maintain historic features and materials; Replace deteriorated historic materials and features; and Design for the replacement of missing historic features. *Guidelines*, 1996: 53, 64, 66.

⁶⁰ William E. Davis, “Technical Report No. 4: Management Recommendation for the Removal of Introduced Woody and Prominent Herbaceous Perennials Along Franklin Creek,” Cooperative National Park Resources Studies Unit: University of California- Davis and NPS, Western Region, San Francisco, November 1981.

⁶¹ National Park Service, “Natural and Cultural Resources Management Plan: Overview.” San Francisco, CA: US Department of Interior, National Park Service, Western Regional Office, November 1981: 2.

⁶² Suggestion from Kimball Koch, from review comment of 75% Draft of Treatment Plan, January 2005.

⁶³ General – Alterations/additions for the new use; Vegetation – Repair historic features and materials; Replace deteriorated historic materials and features; Design for the replacement of missing historic features; and Alterations/additions for the new use. *Guidelines*, 1996: 53, 66.

⁶⁴ Susan Dolan, “A Fruitful Legacy: The Historic Context of Fruit Trees and Orchards in the National Park System.” Olmsted Center for Landscape Preservation, Columbia Cascades Support Office, and National Center for Cultural Resources Stewardships and Partnerships. Draft, March 2001: 74 (Cites USDA 96: 10).

- ⁶⁵ General – Alterations/additions for the new use. From National Park Service, Guidelines, 1996: 53
- ⁶⁶ Vegetation – Repair historic features and materials; Replace deteriorated historic materials and features; Design for the replacement of missing historic features; and Alterations/additions for the new use. Guidelines, 1996: 66.
- ⁶⁷ General – Alterations/additions for the new use. Guidelines, 1996: 53.
- ⁶⁸ General – Alterations/additions for the new use; Vegetation – Design for the replacement of missing historic features. Guidelines, 1996: 53, 66.
- ⁶⁹ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. Guidelines, 1996: 63- 64.
- ⁷⁰ General – Alterations/additions for the new use; Vegetation – Repair historic features and materials; Replace deteriorated historic materials and features; Design for the replacement of missing historic features; and Alterations/additions for the new use. Guidelines, 1996: 53, 66.
- ⁷¹ Vegetation – Replace deteriorated historic materials and features and Design for the replacement of missing historic features. Guidelines, 1996: 66.
- ⁷² Vegetation – Replace deteriorated historic materials and features; Design for the replacement of missing historic features; and Alterations/additions for the new use. Guidelines, 1996: 66.
- ⁷³ Structures, Furnishings, and Objects – Design for the replacement of missing historic features. Guidelines, 1996: 81.
- ⁷⁴ Structures, Furnishings, and Objects – Alterations/additions for new use. Guidelines, 1996: 79, 81.
- ⁷⁵ General – Alterations/additions for the new use. Guidelines, 1996: 53.
- ⁷⁶ General – Alterations/additions for the new use and Vegetation – Alterations/additions for the new use. Guidelines, 1996: 53, 66.
- ⁷⁷ Circulation – Alterations/additions for the new use. Guidelines, 1996: 71.
- ⁷⁸ National Park Service, “General Management Plan and Environmental Assessment.” Denver, CO: US Department of Interior, National Park Service, Western Regional Office, January 1999: ii.
- ⁷⁹ Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; Repair historic features and materials; Replace deteriorated historic materials and features; and Design for the replacement of missing historic features. Guidelines, 1996: 63, 64, 66.
- ⁸⁰ Vegetation – Identify, retain, and preserve historic features and materials and Protect and maintain historic features and materials. Guidelines, 1996: 63- 64.
- ⁸¹ Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; and Replace deteriorated historic materials and features. Guidelines, 1996: 63- 64, 66.

⁸²Richard Inglis, “Stability of Alhambra Creek at the John Muir Gravesite.” Technical Report NPS/NRWRD/NRTR- 2002/297. Fort Collins, CO: US Department of Interior, National Park Service, Water Resources Division, 2002: 29- 30.

⁸³ Suggestion from Kimball Koch, PGBSO, from review comment of 75% Draft of Treatment Plan, January 2005.

⁸⁴ Structures, furnishings, and objects – Identify, retain, and preserve historic features and structures; Protect and maintain historic features and materials; and Repair historic features and materials. *Guidelines*, 1996: 79, 81.

⁸⁵ Vegetation – Protect and maintain historic features and materials; Replace deteriorated historic materials and features; and Design for the replacement of missing historic features; Alterations/additions for the new use. *Guidelines*, 1996: 53, 64, 66.

⁸⁶ Eric P. B. Jepsen and Andrew G. Murdock, “Inventory of Native and Non- Native Vegetation on John Muir National Historic Site, Eugene O’Neill National Historic Site, and Port Chicago National Monument.” PRBO Conservation Science, Spring 2002: 22.

⁸⁷ Vegetation – Design for the replacement of missing historic features. *Guidelines*, 1996: 64.

⁸⁸ Suggestion from Kimball Koch, PWSO, from review comment of 75% Draft of Treatment Plan, January 2005.

⁸⁹ Vegetation – Identify, retain, and preserve historic features and materials. *Guidelines*, 1996: 63.

⁹⁰ For a complete list of threatened and endangered species as well as locally rare species, see Jepsen and Murdock, Spring 2002: 16.

⁹¹ Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; Repair historic features and materials; Replace deteriorated historic materials and features; and Design for the replacement of missing historic features. *Guidelines*, 1996: 63, 64, 66.

⁹² Vegetation – Identify, retain, and preserve historic features and materials; Protect and maintain historic features and materials; Repair historic features and materials; Replace deteriorated historic materials and features; Design for the replacement of missing historic features; and Alterations/additions for the new use. *Guidelines*, 1996: 63, 64, 66.

⁹³ Jepsen and Murdock, Spring 2002: 24.

⁹⁴ Structures, furnishings, and objects – Alterations/additions for a new use. *Guidelines*, 1996: 84.

⁹⁵ Structures, furnishings, and objects – Design for the replacement of missing historic features. *Guidelines*, 1996: 81.

⁹⁶ Structures, furnishings, and objects – Alterations/additions for a new use. *Guidelines*, 1996: 84.

⁹⁷ National Park Service, “Feasibility Study, John Muir Gravesite, Contra Costa County, California: Draft.” San Francisco, CA: US Department of Interior, National Park Service, Western Regional Office, May 1980: 19.

⁹⁸ Structures, furnishings, and objects – Alterations/additions for a new use. *Guidelines*, 1996: 84.

⁹⁹ Ibid.

Figure 2.1: View looking west from the west slope of the knoll toward the Martinez Adobe in c.1885. Dr. Strentzel, Muir's father-in-law, is pictured. (D6-1, Ref: 1885cP17. Same as Figure 2.5 in Volume 1 of the CLR).



Figure 2.2: View looking southwest from the west side of the knoll toward Mt. Wanda in the late 1890s. (JOMU, no file #. Same as Figure 3.5 in Volume 1 of the CLR).



Figure 2.3: Circa 1900-1905 view looking north-northeast from the roof of the house's front porch roof toward adjacent fields, orchards, and vineyards. (D3-2, JOMU, Ref: 1900-05cP30. Same as Figure 3.7 in Volume 1 of the CLR).



Figure 2.4: View from c.1886, looking south, of the carriage drive-loop and the front entrance of the Muir House. (A1-93, Ref: 1886cP1. Same as Figure 2.8 in Volume 1 of the CLR).



Figure 2.5: This view from c.1914 looking south shows the front of the Muir House. (A1-32, JOMU. Same as Figure 3.17 in Volume 1 of the CLR).



Figure 2.6: This photograph is from c.1887 looking north from the north face of Mt. Wanda. (Isaiah West Taber photo No. 3707. Same as Figure 2.6 in Volume 1 of the CLR).



Figure 2.7: This photograph was taken next to the barn in the late 1880s and looks east toward the Muir House. (A1-16, Ref: 1890cP19. Same as Figure 2.7 in Volume 1 of the CLR).



Figure 2.8: This photograph was taken in c.1898 from Mt. Wanda and looks north toward the Muir House and the orchards, vineyards, and hayfields surrounding the knoll. (A1-20, JOMU, Ref: 1898cP24. Same as Figure 3.4 in Volume 1 of the CLR).

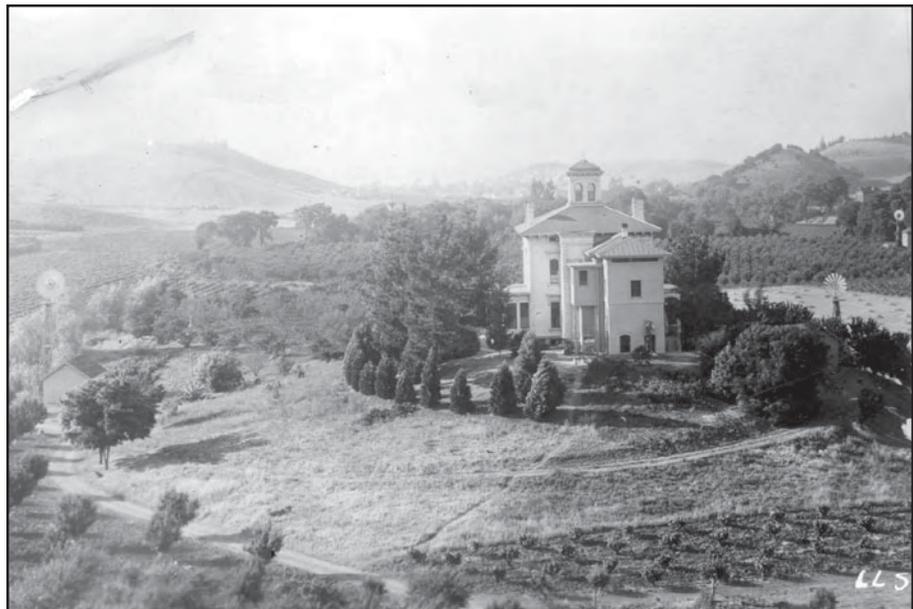


Figure 2.9: This c.1905 photograph looks north from the pear orchard on the north slope of Mt. Wanda. (A1-14, JOMU, or F13, Fr. # 641, Holt-Atherton. Same as Figure 3.8 in Volume 1 of the CLR).



Figure 2.10: View taken c.1910 from Mt. Wanda looking north at the Muir House and towards the town of Martinez and the Straits of Carquinez. (A1-19, JOMU, Ref: 1910-14cP27. Same as Figure 3.15 in Volume 1 of the CLR).

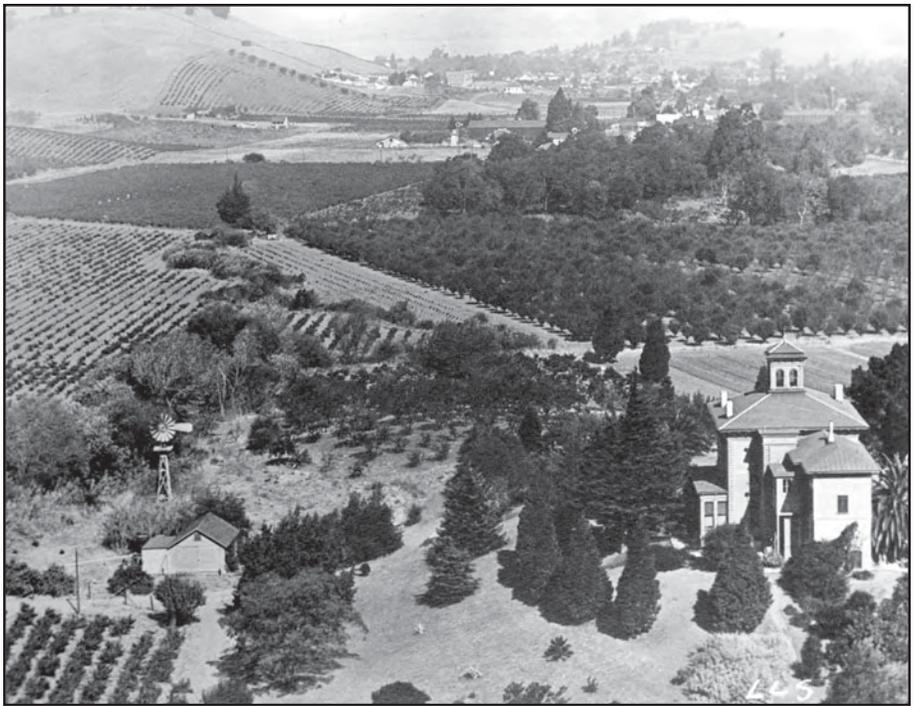


Figure 2.11: View looking west c.1900-1905 from the hay field east of the Muir House. (F13, Fr. #651, Holt-Atherton. Same as Figure 3.6 in Volume 1 of CLR).



Figure 2.12: This photograph of the Muir House, looking southwest toward the wooded north slope of Mt. Wanda, dates from c.1890. (A1-34, Ref: 1890cP18a. Same as Figure 2.9 in Volume 1 of the CLR).





Figure 2.13: View looking northeast from the front walkway in c.1890s. (A-109, JOMU. Same as Figure A4.2 in Volume 1 of the CLR).



Figure 2.14: This view from c.1910 provides good views of the Mt. Wanda pear orchard and the plums and grapes southwest of the Muir House. (A1-30, JOMU, Ref: 1910-14c P29. Same as Figure 3.14 in Volume 1 of the CLR).

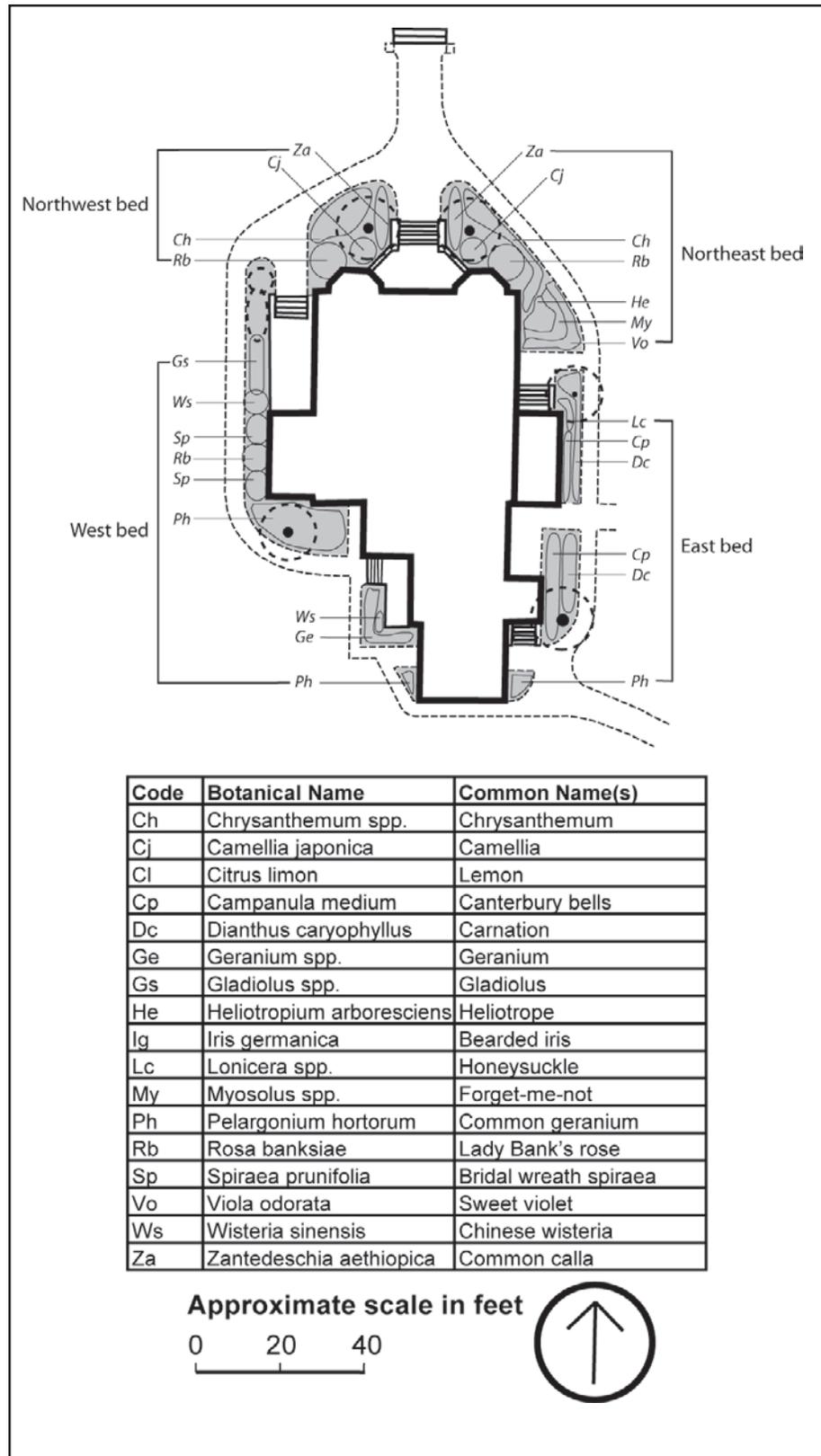


Figure 2.15: Reestablish historic character of the foundation beds - Proposed plantings around the foundation of the Muir House. (OCLP, 2003).



Figure 2.16: Improve pedestrian and maintenance access into the west side of the House Unit - (a) View looking southeast at the vehicular gate on Canyon Way. The pedestrian gate is between the second and third cars from the right, and (b) View looking north on Canyon Way and the path pedestrians and maintenance vehicles currently use. (OCLP, 2003).

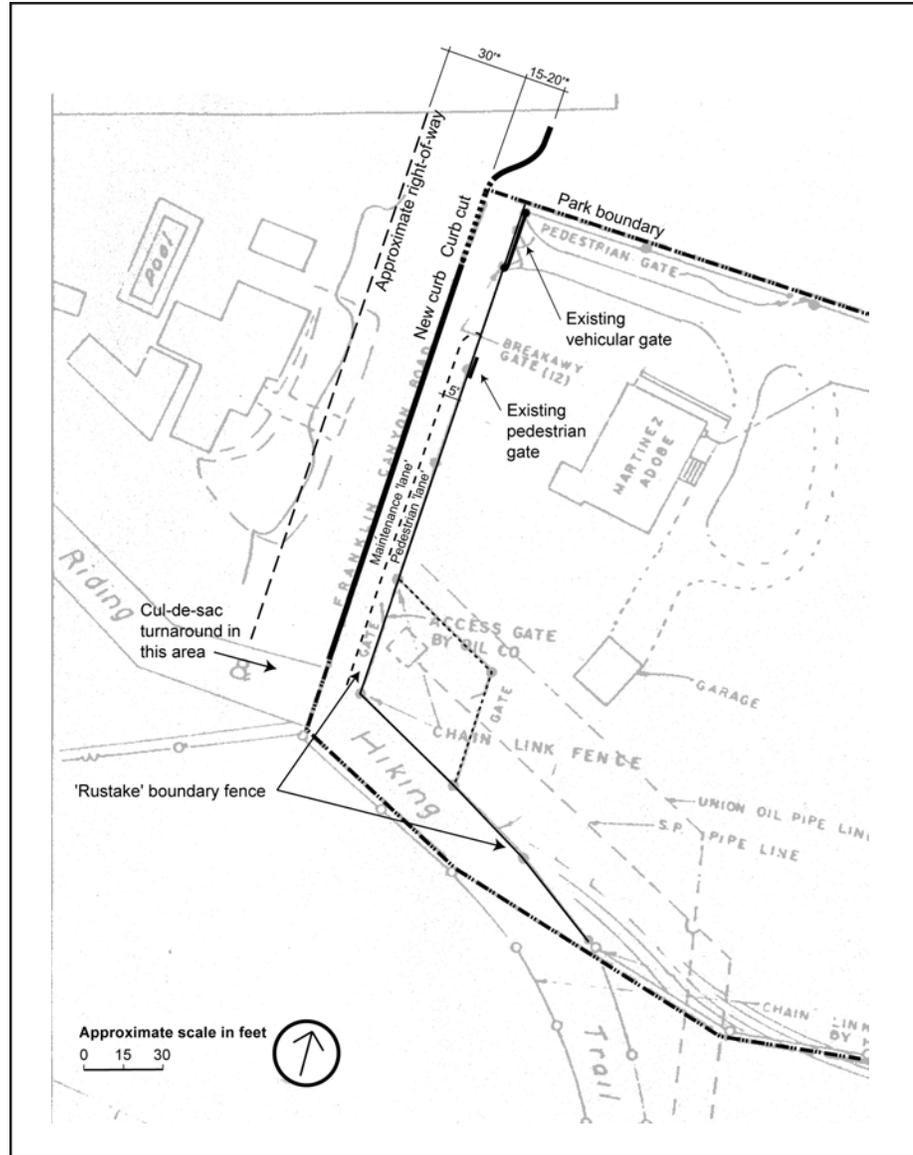


Figure 2.17: Improve pedestrian and maintenance access into the west side of the House Unit - Schematic drawing for a multi-purpose concrete path along Canyon Way. (Drawing adapted by OCLP. "Utilities," John Muir National Historic Site, National Park Service, Washington Regional Office, August 24, 1968, Drawing No. 426/80001).

Figure 2.18: View looking southeast in c.1905 at the Muir House, railroad trestle, and the Martinez Adobe. (F13, Fr.#645. Holt-Atherton. Same as Figure 3.9 in Volume 1 of the CLR).



Figure 2.19: View from c.1912-1913 looking west at the front of the Martinez Adobe. (B1-39, JOMU. Same as Figure 3.18 in Volume 1 of the CLR).

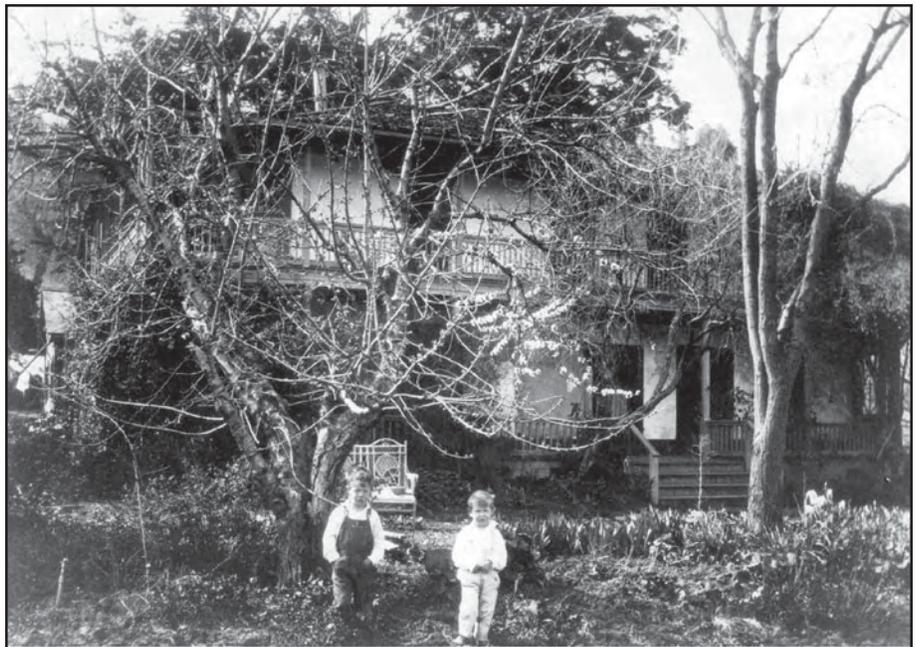


Figure 2.20: This photograph, taken c.1901 from a hillside south of Franklin Creek, is the only known picture of the outbuildings and orchards south of the Martinez Adobe. The Ranch Foreman's House can be seen next to the adobe. (From "Historic Structures Report, Martinez Adobe, John Muir National Historic Site, California." Same as Figure 3.10 in Volume 1 of the CLR).

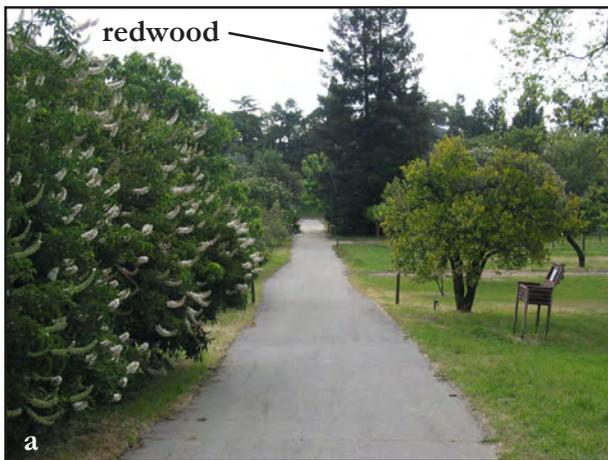
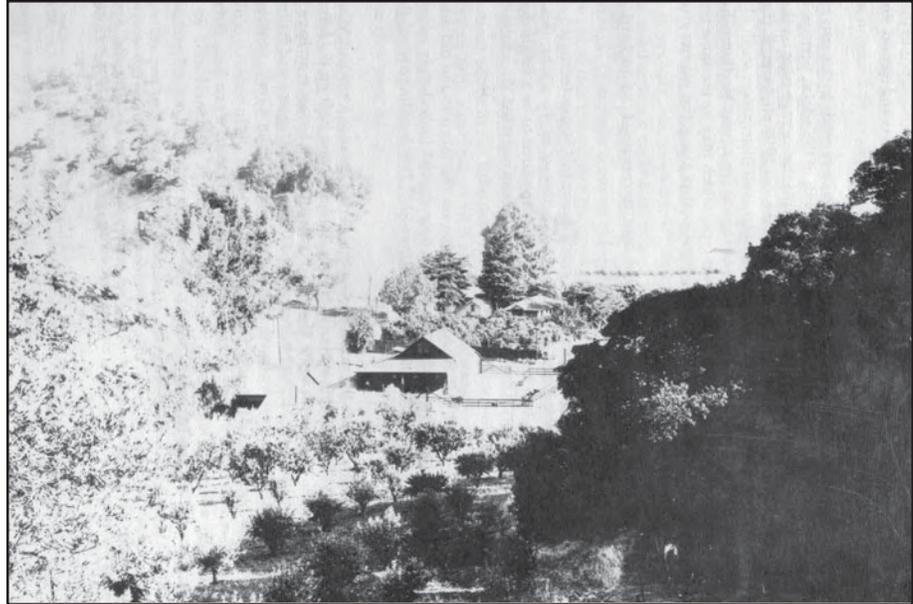


Figure 2.21: Retain and reestablish historic character of Franklin Creek -

(a) The tall coast redwood next to the Franklin Creek Bridge should be removed to restore a view from the main farm road to the Muir House; (b) Removal of many of the tall trees will open up the views across the creek. (OCLP, 2003).

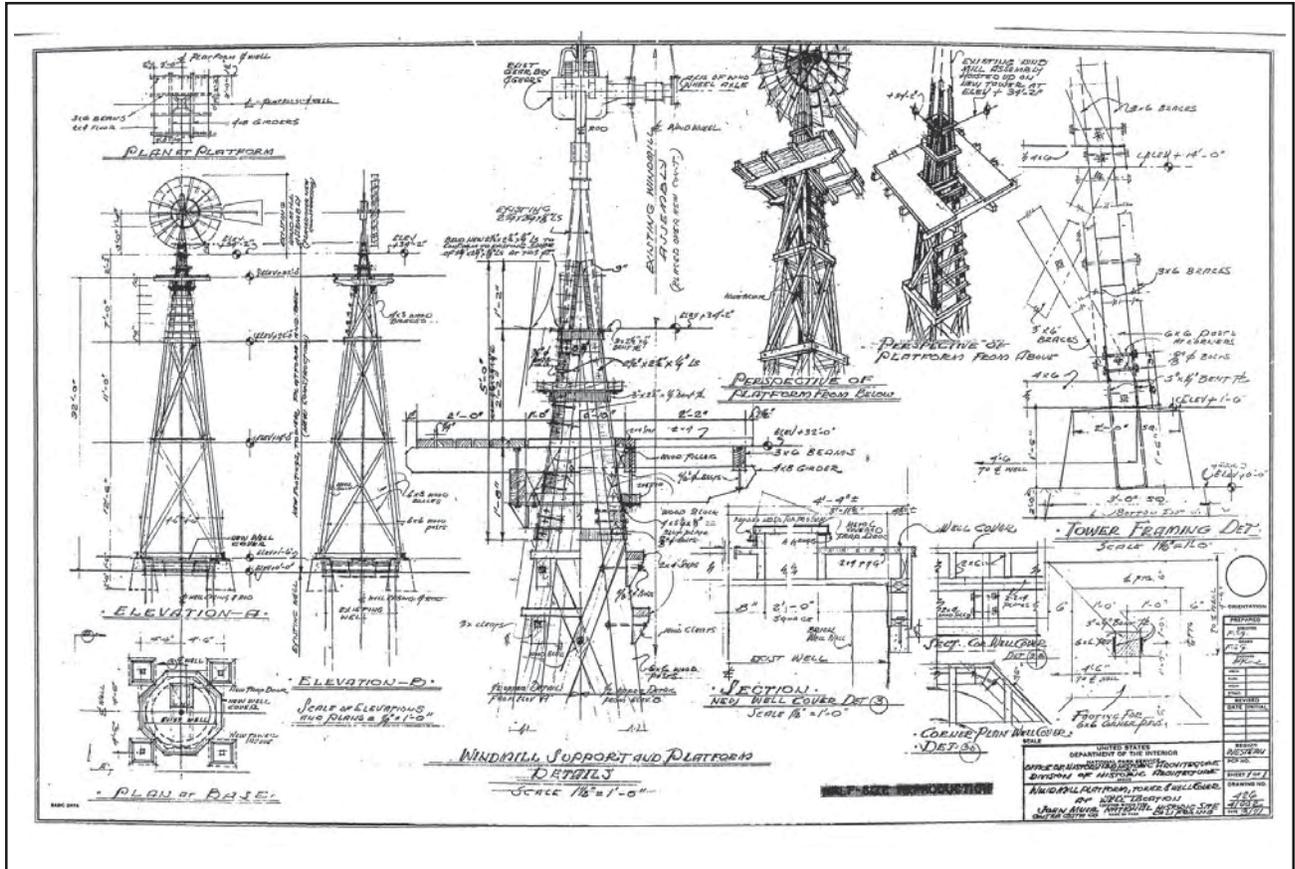


Figure 2.22: Replace the Alhambra windmill - Details for the reconstructed Franklin Creek Windmill. ("Windmill Platform, Tower, and Well," John Muir National Historic Site, NPS, Office of History and Historic Architecture, Division of Historic Architecture, March 1971, Drawing No. 426/41002).



Figure 2.23: Survey Gravesite Unit; develop program for visitor and maintenance access - (a) View looking north at the paper street from the entrance clearing at the Gravesite Unit. Parallel or angled parking spaces could be developed next to the stone wall on the right, and b) View looking south at the same street. The parking spaces would be on the left next to the wall, just before the entrance into the site. Since these photographs were taken, plantings of olives have been installed in these areas. (OCLP, 2003).



Figure 2.24: This portion of the 1939 aerial photograph shows the gravesite area, Strain Ranch, and the Alhambra ranch house. In addition to the apricots and olives on Mt. Wanda, the pear orchard (a) next to the gravesite can also be seen. (JOMU, no #. Same as Figure 4.6 in Volume 1 of the CLR).

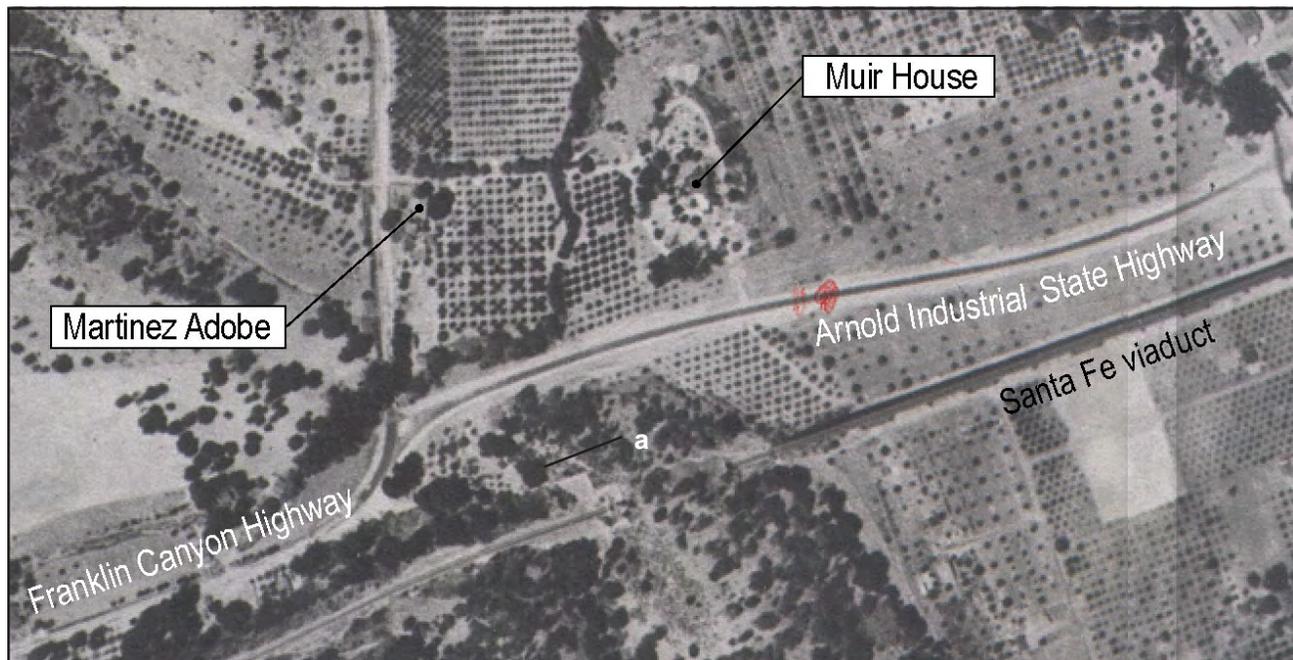


Figure 2.25: This portion of the 1939 aerial photograph shows what may be part of the walnut orchard (a) on the lower north slope of Mt. Wanda. (JOMU, no #. Portion of Figure 4.2 in Volume 1 of the CLR).



Figure 2.26: Alter the existing boundary fences and gates, and oil valves fence at the House Unit - (a) Replacement pickets should be installed along the fence at Franklin Creek ; (b) new pickets should be installed along the south-east boundary fence paralleling State Route 4 from the apple orchard to Franklin Creek; c-d) Removal of the pickets would reestablish a historic view to and from Canyon Way. (OCLP, 2003).



Figure 2.27: Select consistent bench design throughout the park - (a) Bench at Franklin Creek Bridge; b) bench at Mt. Wanda; c) bench at kiosk near park and ride lot; d) prefabricated benches at Visitor Center; and e) prefabricated bench on east side of the Muir House. (OCLP, 2003).



Figure 2.28: Select consistent bench design throughout the park -

(a) The preferred design for a seating bench with back is located in the west orchard northeast of the Martinez Adobe, near the main farm road; and b) the preferred design for a backless bench is located at the bottom of the carriage drive-loop near the bent California fan palm. Both of these types of benches are also located under the grove of redwoods next to Franklin Creek. (OCLP, 2003).



Plants at John Muir National Historic Site

Code	Botanical Name	Common Name(s)	Code	Botanical Name	Common Name(s)
Aa	Agave americana	Century plant	Ng	Nicotiana glauca	Tobacco tree
Ac	Aesculus californica	California buckeye	No	Nerium oleander	Oleander
Aj	Acucuba japonica	Variiegated gold dust plant	Oe	Olea europea	Common olive
Al	Acacia longifolia	Golden Wattle	Oh	Osmanthus heterophyllus	False holly
Am	Acanthus mollis	Bear's breach	P	Perennials	Perennials
Ama	Arctostaphylos manzanita	Manzanita	Pa	Prunus armeniaca	Apricot
Ar	Alcea rosea	Hollyhock	Pap	Papaver spp.	Pink poppy
Ard	Arundo donax	Giant reed	Pc	Pyrus communis	Pear
Au	Arbutus unedo	Strawberry tree	Pca	Phoenix canariensis	Canary Island date palm
Bp	Baccharis pilularis	Dwarf coyote brush	Pcc	Pyraacantha coccinea	Firethorn
Bs	Buddleia spp.	Butterfly bush	Pce	Prunus cerasifera	Cherry plum
Bu	Buxus spp.	Boxwood	Pco	Pinus coulteri	Coulter pine
Ca	Cedrus atlantica	Atlas cedar	Pd	Prunus dulcis	Almond
Cae	Casmanthe aethiopica	Chasmanthe	Pe	Pittosporum eugenioides	Pittosporum
Cc	Callistemon citrinus	Lemon bottle brush	Pg	Punica grantum	Pomegranate
Cca	Carpenteria californica	Anemone	Pga	Prosopis glandulosa	Honey mesquite
Cd	Cedrus deodara	Deodar cedar	Pgl	Picea glauca	White spruce
Cda	Cotoneaster dammeri	Bearberry cotoneaster	Ph	Pelargonium hortorum	Common geranium
Cde	Calocedrus decurrens	Incense cedar	Pin	Pinus spp.	Pine
Cf	Cupressus funebris	Mourning cypress	Pl	Philadelphus lemoinei	Mockorange
Ch	Chrysanthemum spp.	Chrysanthemum	Ply	Prunus lyonii	Catalina cherry
Ci	Carya illinoensis	Pecan	Pm	Pseudotsuga menziesii	Douglas fir
Cj	Camellia japonica	Camellia	Po	Prunus domestica	European plum
Cl	Citrus limon	Lemon	Pp	Prunus persica	Peach
Cla	Crataegus laevigata	English hawthorn	Ppn	Pinus ponderosa	Ponderosa pine
Clg	Chaenomeles lagenaria	Japanese, Flowering quince	Ppu	Picea pungens	Colorado spruce
Cli	Cedrus libani	Cedar of Lebanon	Pr	Pinus radiata	Monterey pine
Cm	Cupressus macrocarpa	Monterey cypress	Ps	Picea sitchensis	Sitka spruce
Co	Cydonia oblonga	Quince	Psa	Prunus salcina	Japanese plum
Coc	Cercis occidentalis	Western redbud	Pv	Prunus avium	Sweet cherry
Cp	Campanula medium	Canterbury bells	Qa	Quercus agrifolia	Coast live oak
Cr	Campsis radicans	Common trumpet vine	Qg	Quercus garryana	Oregon white oak
Cs	Citrinus sinensis	Orange	Ql	Quercus lobata	Valley oak, Cal. white oak
Csc	Cytisus scoparius	Scotch broom	Qs	Quercus suber	Cork oak
Cse	Cornus sericea	American dogwood	Rb	Rosa banksiae	Lady Bank's rose
Csi	Ceratonia siliqua	Carob	Rc	Romneya coulteri	Matilija poppy
Csp	Cupressus spp.	Cypress	Rh	Rosa harisonii	Harison's yellow rose
Cy	Cordylina spp.	Cordylina	Ri	Rhaphiolepis indica	India hawthorn
Dc	Dianthus caryophyllus	Carnation	Rl	Rosa laevigata	Cherokee rose
Ds	Deutzia scabra	Deutzia	Ro	Rosmarinus officinalis	Rosemary
Ec	Eschscholzia californica	California poppy	Rod	Rosa odorata	Tea rose
Ej	Eriobotrya japonica	Loquat	Rov	Rhus ovata	Sugar bush
Eu	Eucalyptus spp.	Eucalyptus	Rp	Robinia pseudoacacia	Black locust
Fc	Ficus carica	Common fig	Rs	Rosa spp.	Rose
Fca	Fremontodendron californica	Flannel bush	Rsp	Ribes speciosum	Fuschia flowering currant
Fs	Feijoa sellowiana	Pineapple guava	Sa	Salvia spp.	Sage
Ge	Geranium spp.	Geranium	Sg	Sequoiadendron giganteum	Giant sequoia
Gl	Gaura lindheimeri	Gaura	Sl	Salix lasiandra	Yellow willow
Gs	Gladiolus spp.	Gladiolus	Sm	Sambucus mexicana	Blue elderberry
Ha	Heteromeles arbutifolia	Toyon	Sp	Spiraea prunifolia	Bridal wreath spiraea
He	Heliotropium arborescens	Heliotrope	Smo	Schinus molle	Pepper tree
Ig	Iris germanica	Bearded iris	Ss	Sequoia sempervirens	Coast redwood
Jc	Juniperus conferta	Shore juniper	Sv	Syringa vulgaris	Common lilac
Jh	Juglans hindsii	California black walnut	Tf	Trachycarpus fortunei	Windmill palm
Jm	Jasminum mesnyi	Primrose jasmine	Tg	Tamarix gallica	Tamarisk
Jr	Juglans regia	English walnut	Ti	Trifolium incarnatum	Crimson clover
La	Lavendula angustifolia	English lavender	Tj	Trachelospermum jasminoides	Star jasmine
Lc	Lonicera spp.	Honeysuckle	To	Thuja occidentalis	American arborvitae
Ln	Laurus nobilis	Sweet bay	U	UNKNOWN	UNKNOWN
Lo	Ligustrum ovalifolium	California privet	Uc	Umbellularia californica	California bay
Ls	Liquidambar styraciflua	Sweetgum	Up	Ulmus pumila	Siberian elm
Lsp	Lampranthus spectabilis	Trailing ice plant	Ve	Verbena spp.	Verbena
Lv	Ligustrum vulgare	Common privet	Vm	Vinca major	Periwinkle
Ma	Morus alba	White mulberry	Vo	Viola odorata	Sweet violet
Maq	Mahonia aquifolium	Oregon grape holly	Vv	Vitus vinifera	Grape
Mc	Myrtus communis	True or Common myrtle	Wf	Washingtonia filifera	California fan palm
Mca	Myrica californica	Pacific wax myrtle	Wr	Washingtonia robusta	Mexican fan palm
Md	Malus domestica	Apple	Ws	Wisteria sinensis	Chinese wisteria
My	Myosolus spp.	Forget-me-not	Za	Zantedeschia aethiopica	Common calla

Park-wide recommendations
 (see text for additional information on the following):
 Boundary fences and gates - House Unit
 Interpretive signage - interpretive panels, marker posts, kiosks
 Benches - materials, design, and locations
 Trash receptacles - materials, design, and locations
 Security lights - materials, design, and locations

Proposed Education and Visitor Center recommendations
 (see text for additional information on the following):
 Circulation
 Buildings and structures

For more detailed information and descriptions, please refer to Chapter 2: Narrative Treatment Guidelines and Tasks

Cultural Landscape Report for John Muir National Historic Site



National Park Service
 Olmsted Center for Landscape Preservation
 99 Warren Street
 Brookline, MA 02445

2005, House Unit Treatment

Drawing 2.1a
 Circulation, Buildings and Structures, and Small scale Features

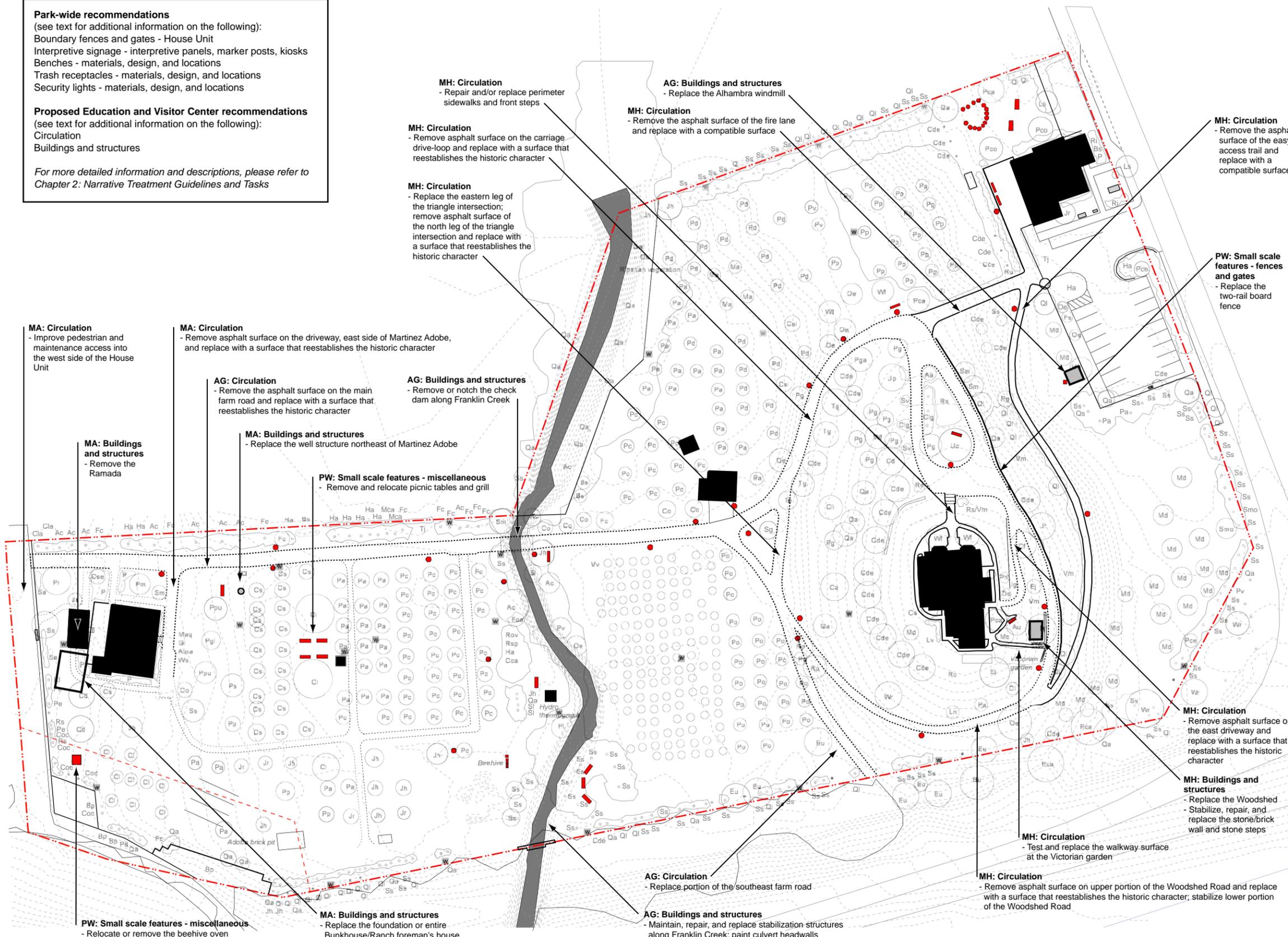
Sources
 Base information from John Muir NHS Geographic Information System, January 2002; historic and contemporary maps and photographs, and field observations in May and July 2003.

Notes
 Locations and scale of features are approximate. Plan drawn using Arcview GIS 3.2 and Adobe Illustrator 10.0 by OCLP, NPS. Field checked May 2003.

Approximate scale in feet
 0 25 50 75 100



- Legend**
- Contour
 - Park Property Line
 - Paved and Dirt Road / Path
 - Building / Structure
 - Water
 - Mass / Specimen Vegetation
 - Interpretive Sign and Bench
 - Water and Utility



Proposed Education and Visitor Center recommendations
(see text for additional information on the following):
Vegetation

For more detailed information and descriptions, please refer to Chapter 2: Narrative Treatment Guidelines and Tasks

MA: Vegetation - West boundary
- Replace Cherokee rose along fence; remove pittosporum, rose, sage, coast redwood, western redbud, dwarf coyote brush; and relocate incense cedars

MA: Vegetation - West side
- Reestablish historic character on west side

MA: Vegetation - Foundation plantings
- Reestablish historic character of foundation plantings

MA: Vegetation - North side
- Reestablish historic character on north side

MA: Vegetation - East side
- Reestablish historic character on east side

AG: Vegetation - North-west boundary
- Retain, maintain, and replace fig trees

AG: Vegetation - South-west boundary
- Remove coast live oak, almond, fig, California white oak, California black walnut, and coast redwood; remove railroad ties; relocate incense cedars and dwarf coyote brush

MH: Vegetation - Carriage drive-loop
- Retain and maintain the giant sequoia
- Reestablish the historic character of plantings along north and south sides of drive
- Reestablish the historic character of plantings on east side of loop
- Retain and reestablish the historic character of plantings on west side of loop
- Reestablish the historic character of plantings in center island

MH: Vegetation - West slope
- Retain row of incense cedars
- Retain and maintain Lebanon and atlas cedars
- Retain and maintain black locust trees along Woodshed Road
- Reestablish the open space character of west slope

MH: Vegetation - Fish pond space
- Reestablish historic character of fish pond space
- Retain and maintain quinces and fig

MH: Vegetation - Middle orchard space
- Reestablish historic character of middle orchard
- Remove coast redwood grove

MH: Vegetation - Franklin Creek
- Retain and reestablish historic character along Franklin Creek
- Remove native plant garden

MH: Vegetation - West orchard space
- Reestablish historic character of west orchard

AG: Vegetation - North-east boundary
- Remove coast redwood, California white oak, California black walnut, and coast live oak

AG: Vegetation - North orchard space
- Reestablish historic character of north orchard
- Retain and replace incense cedars

AG: Vegetation - South-east boundary
- Retain and maintain eucalyptus grove (4)
- Retain and maintain Canary Island date palms (2) and Mexican-Washington palm
- Remove coast redwood, coast live oak, California white oak, sweet cherry, cherry plum, pepper tree, and California black walnut; relocate incense cedars

MH: Vegetation - West side
- Remove apple tree; maintain open space character in west lawn
- Remove the privet hedge

MH: Vegetation - Foundation
- Retain and maintain California fan palms in north beds, and Canary Island date palm and lemon in east bed
- Reestablish historic character of the foundation beds

MH: Vegetation - East side
- Retain the mourning cypress and Oregon white oak
- Determine the ages of the strawberry tree, loquat, and black walnut
- Replace the windmill palm; maintain open space character in east lawn
- Remove the Victorian flower garden

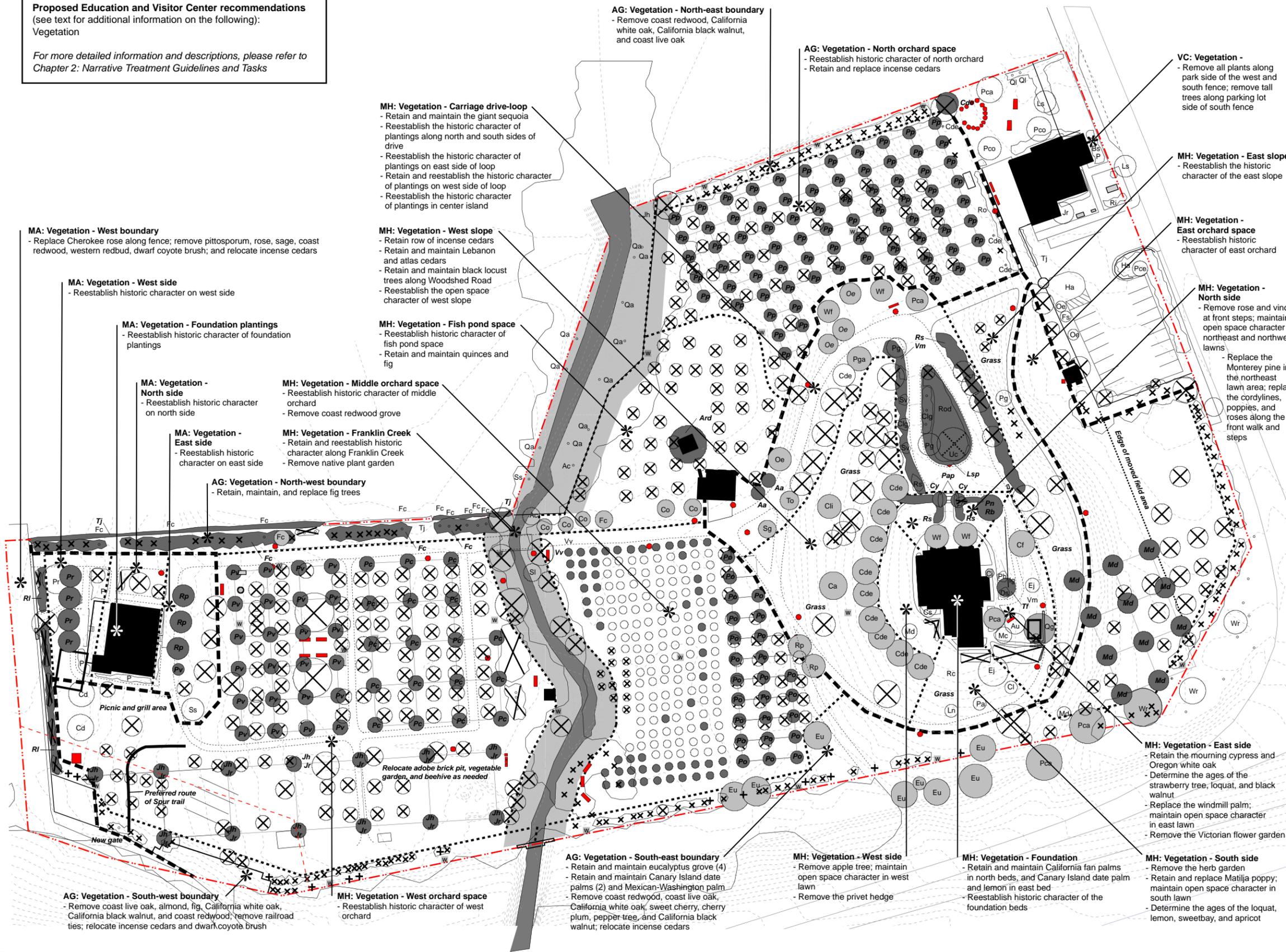
MH: Vegetation - South side
- Remove the herb garden
- Retain and replace Matilija poppy; maintain open space character in south lawn
- Determine the ages of the loquat, lemon, sweetbay, and apricot

VC: Vegetation
- Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence

MH: Vegetation - East slope
- Reestablish the historic character of the east slope

MH: Vegetation - East orchard space
- Reestablish historic character of east orchard

MH: Vegetation - North side
- Remove rose and vinca at front steps; maintain open space character in northeast and northwest lawns
- Replace the Monterey pine in the northeast lawn area; replace the cordylines, poppies, and roses along the front walk and steps



Cultural Landscape Report for John Muir National Historic Site



National Park Service
Olmsted Center for Landscape Preservation
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Brookline, MA 02445

2005, House Unit Treatment

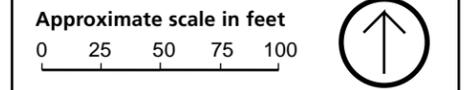
Drawing 2.1b
Vegetation

Sources

Base information from John Muir NHS Geographic Information System, January 2002; historic and contemporary maps and photographs, and field observations in May and July 2003.

Notes

Locations and scale of features are approximate. Plan drawn using Arcview GIS 3.2 and Adobe Illustrator 10.0 by OCLP, NPS. Field checked May 2003.



Legend

- Contour
- Park Property Line
- Paved and Dirt Road / Path
- Building / Structure
- Water
- Mass / Specimen Vegetation
- Contributing Vegetation
- Plants to Add / to Retain
- Plants to Remove / to Relocate

Cultural Landscape Report for
John Muir National Historic Site



National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445

2005, Mt. Wanda Unit
Treatment

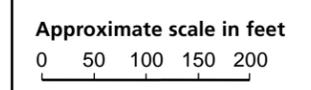
Drawing 2.3

Sources

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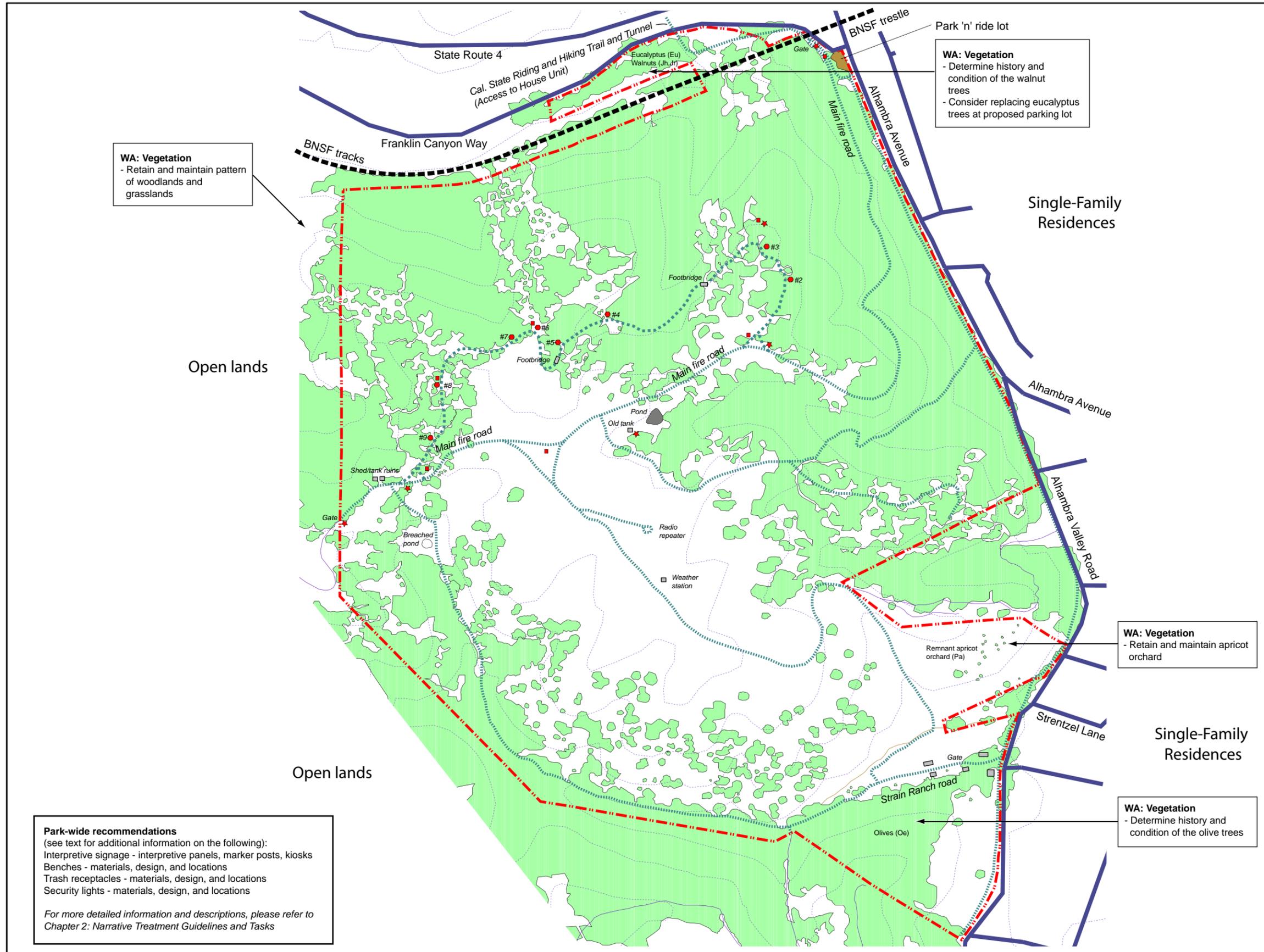
Notes

Locations and scale of features are approximate. Plan drawn using Arcview GIS 3.2 and Adobe Illustrator 10.0 by OCLP, NPS. Field checked May 2003.



Legend

- Contour
- Park Property Line
- Paved Road, Gravel Road, Trail
- Building / Structure
- Water
- Mass Vegetation
- Tour Sign, Other Sign
- Bench



WA: Vegetation
- Retain and maintain pattern of woodlands and grasslands

WA: Vegetation
- Determine history and condition of the walnut trees
- Consider replacing eucalyptus trees at proposed parking lot

WA: Vegetation
- Retain and maintain apricot orchard

WA: Vegetation
- Determine history and condition of the olive trees

Park-wide recommendations
(see text for additional information on the following):
Interpretive signage - interpretive panels, marker posts, kiosks
Benches - materials, design, and locations
Trash receptacles - materials, design, and locations
Security lights - materials, design, and locations

For more detailed information and descriptions, please refer to Chapter 2: Narrative Treatment Guidelines and Tasks

CHAPTER 3

PRIORITY TREATMENT PROJECTS AND RECOMMENDATIONS FOR ADDITIONAL WORK

INTRODUCTION

The treatment recommendations and plans contained in this CLR are intended to provide an overview and guidance related to the rehabilitation of the landscape at the John Muir NHS. The sections that follow in this chapter prioritize some of the most important treatment tasks described in the previous chapter and summarize future projects that will improve the condition of landscape characteristics and features. Appendix 3 includes a response letter from the State of California SHPO regarding the treatment plan.

PRIORITY TREATMENT PROJECTS

The park will ultimately determine the priorities for implementing landscape treatment work based on site conditions, interpretive goals, cost, environmental permitting, programmatic needs, and other factors. The following list, however, highlights several projects that are key to protecting and maintaining historic features and improving the historic character of the Muir period, and should be implemented in the near future.

PARK-WIDE

Stabilize and maintain historic plant material.

Given the great diversity of historic vegetation in the park and the age and condition of these plants, stabilization and maintenance of all historic plant material is at the top of the list. Replacement strategies should be in place for all such plants. Propagation of historic plant material is useful but not essential for all contributing vegetation. However, propagation of cultivated varieties of ornamental plants and historic orchard trees (the pears at the Gravesite Unit and the apricots at Mt. Wanda) is very important. The park should establish a relationship with Golden Gate National Recreation Area or another Bay Area park in order to use their plant propagation facilities. Another alternative may be to construct a temporary facility at the park, either in the west orchard near the south- west boundary fence or at the Strain Ranch. This option would be dependent on the availability of staff and/or volunteers from the Master Gardeners program.

Project references:

- GR: Vegetation – “Reestablish historic character of pear orchard”
- WA: Vegetation – “Retain and maintain apricot orchard”

HOUSE UNIT**Reestablish the key view between the Muir House and Martinez Adobe.**

The important spatial and visual relationship between the Muir House and Martinez Adobe has been compromised primarily because of non- historic vegetation west of the house, tall vegetation along Franklin Creek south of the main farm road, the native plant garden and pecan trees in the west orchard space, and the memorial spruces on the west side of the Martinez Adobe. Managing and/or removing these plants will reestablish this connection and improve visitor understanding of the agricultural characteristics of the fruit ranch (Figure 2.1).

Project references:

- MH: Vegetation – West slope – “Reestablish the open space character of west slope”
- MA: Vegetation – East side – “Reestablish historic character on east side”
- AG: Vegetation – Franklin Creek – “Retain and reestablish historic character of Franklin Creek”
- AG: Vegetation – West orchard space – “Remove native plant garden”
- AG: Vegetation – West orchard space – “Reestablish historic character of west orchard”
- AG: Buildings and structures – “Remove or notch the check dam along Franklin Creek”

Reestablish the key view from the Muir House to Mt. Wanda.

One of the main reasons the park sought to acquire Mt. Wanda was that its undeveloped north slope provided one of the last unimpaired views from the House Unit and likely resembled conditions that were present during Muir’s time. This view has now been compromised by features within the park’s boundaries, namely the tall non- historic coast redwoods next to the creek. Recent plantings installed along this area of the south- east boundary fence should also be removed before they become too tall and cause the same problems (Figure 2.2).

Project references:

- AG: Vegetation – South- east boundary – “Remove coast redwood, coast live oak, California white oak, sweet cherry, cherry plum, pepper tree, and California black walnut; relocate incense cedars”
- AG: Vegetation – Middle orchard space – “Remove coast redwood grove”
- AG: Buildings and structures – “Maintain, repair, and replace stabilization structures along Franklin Creek; paint culvert headwalls”

Reestablish the view between the Muir House and the Visitor Center.

Although the landscape around the Muir House was full of many shrubs and trees, it was still possible to see the orchards and fields to the north and east. This agricultural setting has been lost to suburban development that produced the building now housing the park’s Visitor Center. While those realities cannot be undone, the main threat to the view – the growth of potentially historic vegetation (the California bay) and non- historic vegetation along the east side of the loop and on the east slope of the knoll (memorial plantings) – can be addressed (Figure 2.3).

Project references:

- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings in center island”
- MH: Vegetation – Carriage drive- loop – “Reestablish the historic character of plantings on east side of loop”
- MH: Vegetation – East slope – “Reestablish the historic character of the east slope”
- VC: Vegetation – “Remove all plants along park side of the west and south fence; remove tall trees along parking lot side of south fence”

Reestablish the historic character of the fish pond space.

The orchard trees planted during the NPS period in this former open space create a false historical appearance and should be removed so that the historic open space character can be reestablished.

Project reference:

- AG: Vegetation – Fish pond space – “Reestablish historic character of fish pond space”

Remove asphalt from historic roads and drives.

Although many of the park's historic roads and driveways were paved in asphalt during the NPS period, their alignments and widths have remained essentially intact. Returning them to their original earthen/gravel appearances will greatly enhance the rural agricultural character of the House Unit. If possible, an unbound earthen and gravel material with stabilizer should be used. If this is not possible because of accessibility concerns or durability issues, a bonded aggregate material or another technique that is appropriate for this location and setting can be considered. Regardless of the surface treatment, the historic roads and drives should have a different appearance than that of the non- historic circulation features.

Project references:

- MH: Circulation – “Remove asphalt surface on the carriage drive- loop and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on the east driveway and replace with a surface that reestablishes the historic character”
- MH: Circulation – “Remove asphalt surface on upper portion of the Woodshed Road and replace with surface that reestablishes the historic character; stabilize lower portion of the Woodshed Road”
- MH: Circulation – “Replace the eastern leg of the triangle intersection; remove asphalt surface of the north leg of the triangle intersection and replace with a surface that reestablishes the historic character”
- MA: Circulation – “Remove asphalt surface on the driveway, east side of Martinez Adobe, and replace with a surface that reestablishes the historic character”
- AG: Circulation – “Remove the asphalt surface on the main farm road and replace with a surface that reestablishes the historic character”

Replace asphalt on non-historic circulation features with compatible surfaces.

Many of the park's historic and non- historic circulation features are paved in asphalt and as a result are not in keeping with the historic early twentieth-century setting. Although the previous project statement will help differentiate circulation features that are contributing from those that are not, the non- contributing features should nonetheless be compatible in appearance with the historic setting. The park should replace the surfaces of the non- historic paths with a bonded aggregate surface or another technique that is compatible in this location and setting. Future walkways around the

proposed Education and Visitor Center and the proposed spur trail should adhere to this prescription so that the non- historic circulation features appear as one unified system that is different in appearance than the historic circulation system.

Project references:

- MH: Circulation – “Remove asphalt surface of the fire lane and replace with a compatible surface”
- MH: Circulation – “Remove asphalt surface of the easy access trail and replace with a compatible surface”
- MA: Circulation – “Improve pedestrian and maintenance access into the west side of the House Unit”
- VC: Circulation – “Circulation recommendations for the proposed Visitor Center”

GRAVESITE UNIT

Determine the boundaries of the Gravesite Unit.

Surveying and field locating the legal boundaries of the site are needed in advance of several projects at the Gravesite Unit that include bank stabilization along the Arroyo del Hambre, treatment of the small southern section of the orchard, pedestrian and maintenance access into the site, installation of a boundary fence, and design of possible vegetation screening features along the boundary.

Project references:

- GR: Circulation – “Survey Gravesite Unit; develop program for visitor and maintenance access”
- GR: Vegetation – “Reestablish historic character of pear orchard”
- GR: Vegetation – “Stabilize plantings along the creek; replace Cherokee rose, elderberry, willow, and turfgrass; remove coast redwood; determine age and monitor coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays”
- PW: Small- scale features – fences and gates – “Install boundary fences at the Gravesite Unit”

Stabilize the banks of the Arroyo del Hambre and the gravesite.

The preservation and stabilization of the grave markers and the granite enclosure are directly connected to bank stabilization needs along the Arroyo del Hambre and should be a priority.

Project references:

- GR: Vegetation – “Stabilize plantings along the creek; replace Cherokee rose, elderberry, willow, and turfgrass; remove coast redwood; determine age and monitor coast live oaks, Ponderosa pines, hawthorn, incense cedar, and California bays”
- GR: Buildings and structures – “Preserve, stabilize, and repair the grave markers and granite enclosure”

MT. WANDA UNIT**Date and research the remnant orchard trees at Mt. Wanda.**

The remnant apricot and olive orchards near the Strain Ranch and the scattered specimens of walnut trees on the lower north slope of Mt. Wanda need to be researched further. These trees have not been maintained and are in decline, and may be significant to the historic period (the apricots are known to date to Muir’s time). Future decisions regarding the preservation, stabilization, and maintenance of the trees need to be informed by additional research and should complement broader management plans for the Mt. Wanda area.

Project reference:

- WA: Vegetation – “Retain and maintain apricot orchard”
- WA: Vegetation – “Determine history and condition of olive trees”
- WA: Vegetation – “Determine history and condition of walnut trees”

Monitor woodlands on Mt. Wanda for sudden oak death disease.

The severity of the sudden oak death disease in the woodland areas of Mt. Wanda and should could be catastrophic if left unchecked. This disease should be carefully and diligently monitored.

Project reference:

- WA: Vegetation – “Retain and maintain pattern of woodlands and grasslands”

RECOMMENDATIONS FOR FUTURE WORK

The tasks listed below relate to work required prior to the implementation of the treatment plan as well as projects that are recommended to improve the condition of the landscape and expand the understanding of the park as a whole.

Update the Orchard Management Plan and Integrated Pest Management Plan.

Treatment recommendations regarding the park's orchard spaces primarily address historic character. Prior to any work in the orchards, updated orchard and pest management plans should be developed that provide specific information regarding the selection, planting, and maintenance of the trees and vines. The plans should also provide guidance on cover crops in agricultural areas and the fish pond space and turfgrasses in non-agricultural open areas at the Muir House and knoll, and the Martinez Adobe.

Prepare a detailed planting and installation plan for Franklin Creek.

In consultation with NPS natural resource specialist as well as state and local authorities, the park should develop a detailed planting plan for the removal of non-native plants and installation of native plants along Franklin Creek. The work will likely need to be phased to minimize soil erosion along the creek banks and the effects on downstream interests. The short- and long-term health of the stream itself should also be considered in this effort.

Conduct historic plant research around the Muir House and Martinez Adobe.

The park should seek the services of a horticulturalist or botanist to identify and research the historic shrub and perennial plantings around the Muir House and the Martinez Adobe. At the house, attention should be focused on the foundation beds, carriage-drive loop area, and the reported existence of a kitchen garden on the south side of the house. Historic photographs, diaries, and letters, historic plant catalogs, and other appropriate materials should be researched to determine which plant varieties were present during the historic period and information regarding their form and character. Additionally, if these varieties cannot be determined, are no longer available, or are inappropriate because of diseases or other problems, guidance on appropriate substitute varieties should be provided so that the historic character and form can be reestablished. The foundation and planting areas at the adobe have even less documentation and should also be researched as part of this effort.

Prepare fire management, grazing, and weed abatement plans for Mt. Wanda.

Comprehensive studies and plans should be prepared to weigh the advantages and disadvantages of managing the lands on Mt. Wanda through

controlled burns, grazing, and weed removal programs. The underlying focus should be to preserve the woodland and grassland mosaic that contributes to the rural and natural character and consider the future of the three orchard areas (apricot, olive, and walnut). This plan should also determine the ultimate use of the existing fire roads, stock ponds, livestock structures, and boundary fences and gates.

Prepare a preservation maintenance plan.

The landscape at the John Muir NHS is a dynamic resource that will continue to age, be subject to natural weathering, and change as time passes. A landscape preservation maintenance plan should be prepared to provide a framework for maintenance operations with the focus on the preservation of historic character. The maintenance plan could be completed for a specific area, such as the Muir House and knoll, or a specific type of feature, such as specimen trees (orchard trees will be addressed separately in an orchard management plan).

Preservation maintenance plans are typically prepared by a multi-disciplinary team that includes park staff who adapt the typical plan outline to suit their needs. Ultimately, the preservation maintenance plan will greatly facilitate on-site operations, help determine yearly work planning, and provide a venue for record keeping. The plans typically define objectives; identify management zones and categories of features; inventory landscape features; provide field inspections and a summary of work needed; record feature data and a format for record keeping; and develop a seasonal calendar of work.¹ Consensus on the desired level of maintenance and staffing is needed before the maintenance plan is prepared. Ongoing monitoring of the historic landscape is also needed to record physical change (e.g. invasive species and vegetation growth) and document issues related to the condition of specific features. This is particularly important for significant views, to determine when intervention such as pruning or removal is needed (e.g. the CALTRANS plantings on the fill slopes of State Route 4).

Conduct additional research at the Strain Ranch.

The history, existing conditions, significance, and integrity of this complex should be revisited prior to acquisition of the Strain Ranch in 2012. (The California State Historic Preservation Office has determined that the buildings have no direct connection to John Muir and are not eligible for National Register. However, the bungalow dates from Muir's time and was on land that he owned. Its close proximity to the Alhambra ranch house

suggests a link that should be explored). Ideas suggested in the park's 1991 "General Management Plan/Environmental Assessment" as well as the 2003 Treatment Charrette included developing a permanent and expanded home for the Environmental Living Program and development of a historic plant propagation area.

Conduct additional research regarding the Strentzel-Muir Ranch.

Possible areas of research include documenting the many land acquisitions and transactions that occurred at the former 2300- acre ranch beginning in 1853. This information may yield more information about specific land uses. This work should also identify and assess known remnant orchard trees in the neighborhoods and open spaces that surround the park's three units and search for other remnant fruit trees that may be incorporated into the landscapes of private landowners. This work may be especially important for propagating historic plant material. It should also consider lands near the town of Crockett that were once part of the ranch (see Figure 3.13 in Chapter 3, Volume 1).

Amend National Historic Landmark (NHL) nomination with landscape component.

The information provided in this CLR will be useful in adding landscape information to the NHL document.

ENDNOTES FOR CHAPTER THREE

¹ Margaret Coffin Brown and Regina Bellavia, *Guide to Developing a Preservation Maintenance Plan for a Historic Landscape*. Cultural Landscape Publication No. 7, revised edition. Boston, MA: National Park Service, Olmsted Center for Landscape Preservation, 1998.

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"JOMU Folder 1973- 1994"
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Miscellaneous plans, letters, and memorandums.

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"Correspondence Reading File."
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"Maintenance Binder 1"

INTERVIEWS AND MEETING NOTES

Treatment Charette, 16 July 2003 to 17 July 2003, JOMU.

Telephone conversation with Kimball Koch, 2 September 2003, by author.

APPENDIX 1

STANDARDS FOR REHABILITATION

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions, while preserving those portions or features which convey its historical, cultural, or architectural values.'

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.
- Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- Changes to a property that have acquired historic significance in their own right shall be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be

compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

ENDNOTES FOR APPENDIX ONE

¹ National Park Service, *The Secretary of Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Treatment of Historic Landscapes*. Washington DC: US Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative, 1996: 48- 49.

APPENDIX 2

PRODUCT INFORMATION AND SPECIFICATIONS

The following information is included to guide the park achieve some of the treatment tasks outlined in Chapter 2: Narrative Treatment Guidelines. The web sites below are representative and are by no means the only sources of information on these topics. (Specific material related to turfgrass is included in this appendix.)

ROAD AND PATH STABILIZATION

<http://www.stabilizersolutions.com>

TURFGRASS

http://ccmg.ucdavis.edu/TURFGRASS/turfgrass_leaflet.htm

http://ccmg.ucdavis.edu/TURFGRASS/turfgrass_species.htm

<http://www.ipm.ucdavis.edu/PDF/PMG/pmgturfgrass.pdf>

<http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnclovers.pdf>

COVER CROPS

“Cover Cropping in Vineyards: A Grower’s Handbook.” See

<http://anrcatalog.ucdavis.edu>

LIGHTING

<http://lsi-industries.com>

<http://www.holophane.com>

TRASH RECEPTACLES

<http://www.victorstanley.com>

Selecting the Best Turfgrass*

Selecting a turfgrass successfully requires knowing how the turf will be used, where it will be grown, and what appearance and maintenance level will be acceptable. Because each turfgrass species has good and bad features, one must learn the strengths and weaknesses of each species to choose the one best suited to a particular situation.

The following lists rank common turfgrass species according to important characteristics and requirements and their relation with each other. Within a category a given grass may differ little from the one listed immediately above or below it; it may, however, differ greatly from one further up or down on the list. The precise position of a turfgrass in a list may change slightly as more is learned about it or improved varieties are developed, but its location (high, low or intermediate) is not likely to change and can therefore be usefully reviewed when preparing to plant.

The “warm season” turfgrasses listed, bermudagrasses (common and hybrid), Dichondra, Kikuyugrass, Seashore paspalum, St Augustinegrass and Zoysiagrass, generally lose their green color and are dormant in winter, if the average air temperature drops below 50° to 60°F (10° to 15.5° C). Some may die if exposed to subfreezing temperatures for extended periods.

The “cool season” turfgrasses ordinarily do not lose their green color unless the average air temperature drops below 32°F (0° C) for an extended period; they turn green again as soon as temperatures rise above freezing, and are not usually damaged by subfreezing temperatures.

Click [here](#) for scientific and common names for turfgrasses.

Click on the turf characteristic below for a comparative ranking of the types of turf under different conditions.

1. [Texture](#) 2. [Heat tolerance](#) 3. [Cold Tolerance](#) 4. [Mowing height adaptaion](#) 5. [Nitrogen requirement](#) 6. [Salinity tolerance](#) 7. [Drought tolerance](#) 8. [Disease incidence](#) 9. [Shade tolerance](#) 10. [Wear resistance](#) 11. [Recovery from moderate wear](#) 12. [Recovery from severe injury](#) 13. [Establishment rate](#) 14. [Maintenance cost and effort](#)

*Content for this document was taken from "Selecting the Best Turfgrass", Cooperative Extension, University of California, Division of Agriculture and Natural Resources. Leaflet 2589, revised 1984.

Turfgrasses are listed here alphabetically by common name. Names can vary among locations, so refer to the accompanying list of scientific names when uncertain about common ones.

TURFGRASSES

Common name

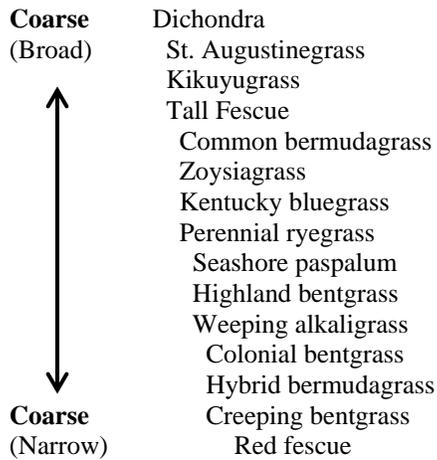
Scientific name

Annual ryegrass*	<i>Lolium multiflorum</i>
Bermudagrass (common)	<i>Cynodon dactylon</i>
Bermudagrass (hybrid)	<i>Cynodon spp.</i>
Colonial bentgrass	<i>Agrostis tenuis</i>
Creeping bentgrass	<i>Agrostis palustris</i>
Dichondra=	<i>Dichondra micrantha</i>
Highland bentgrass	<i>Agrostis spp. cv "Highland"</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Kikuyugrass	<i>Pennisetum clandestinum</i>
Perennial ryegrass	<i>Lolium perenne</i>
Red fescue	<i>Festuca rubra</i>
Seashore paspalum	<i>Paspalum vaginatum</i>
St. Augustinegrass	<i>Stenotaphrum secundatum</i>
Tall Fescue	<i>Festuca arundinacea</i>
Weeping alkaligrass	<i>Puccinellia distans</i>
Zoysiagrass	<i>Zoysia spp.</i>

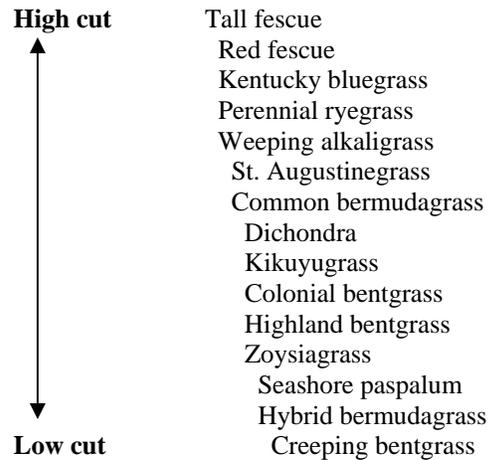
* Annual ryegrass is both annual and inferior in generally recognized turfgrass characteristics; therefore, it is not ranked here with the other turfgrass species. It is, however, commonly used to overseed winter-dormant warm season turfgrasses or where a temporary vegetative cover is needed.

= Although considered a perennial "broadleaf" and not a grass, Dichondra can be maintained as a lawn in regions where warm summer turfgrasses are adapted.

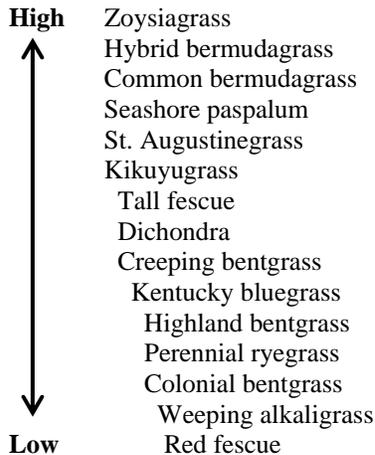
1. TEXTURE (Leaf-blade width)



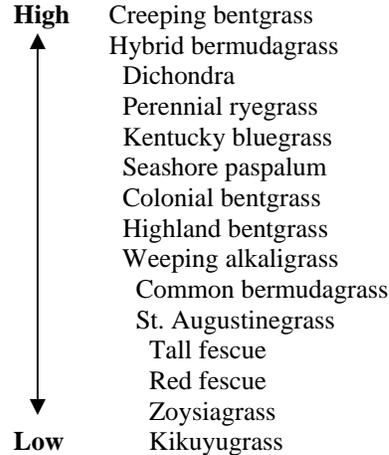
4. MOWING HEIGHT ADAPTATION



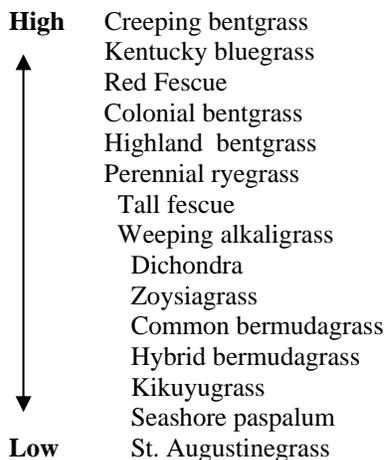
2. HEAT TOLERANCE



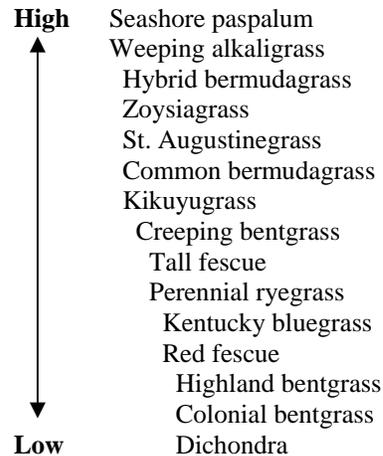
5. NITROGEN REQUIREMENT



3. COLD TOLERANCE (winter color persistence)



6. SALINITY TOLERANCE



7. DROUGHT TOLERANCE

High	Hybrid bermudagrass
	Zoysiagrass
	Common bermudagrass
	Seashore paspalum
	St. Augustinegrass
	Kikuyugrass
	Tall fescue
	Red fescue
	Kentucky bluegrass
	Perennial ryegrass
	Highland bentgrass
	Creeping bentgrass
	Colonial bentgrass
	Weeping alkaligrass
Low	Dichondra

10. WEAR RESISTANCE

High	Zoysiagrass
	Kikuyugrass
	Hybrid bermudagrass
	Tall fescue
	Common bermudagrass
	Seashore paspalum
	Perennial ryegrass
	Kentucky bluegrass
	Red fescue
	St. Augustinegrass
	Highland bentgrass
	Colonial bentgrass
	Creeping bentgrass
	Weeping alkaligrass
Low	Dichondra

8. DISEASE INCIDENCE

High	Dichondra
	Creeping bentgrass
	Weeping alkaligrass
	Colonial bentgrass
	Highland bentgrass
	Kentucky bluegrass
	Red fescue
	Perennial ryegrass
	St. Augustinegrass
	Seashore paspalum
	Hybrid bermudagrass
	Tall fescue
	Zoysiagrass
	Common bermudagrass
Low	Kikuyugrass

11. RECOVERY - MODERATE WEAR

Fast	Hybrid bermudagrass
	Kikuyugrass
	Common bermudagrass
	Seashore paspalum
	Tall fescue
	Perennial ryegrass
	St. Augustine
	Kentucky bluegrass
	Dichondra
	Highland bentgrass
	Creeping bentgrass
	Red fescue
	Weeping alkaligrass
	Zoysiagrass
Slow	Colonial bentgrass

9. SHADE TOLERANCE

High (Shade)	Red fescue
	St. Augustinegrass
	Zoysiagrass
	Seashore paspalum
	Dichondra
	Kikuyugrass
	Creeping bentgrass
	Colonial bentgrass
	Highland bentgrass
	Tall fescue
	Kentucky bluegrass
	Perennial ryegrass
	Weeping alkaligrass
	Hybrid bermudagrass
Low (Sun)	Common bermudagrass

12. RECOVERY - SEVERE INJURY

Complete	Hybrid bermudagrass
	Kikuyugrass
	Common bermudagrass
	Seashore paspalum
	Zoysiagrass
	Creeping bentgrass
	Highland bentgrass
	Kentucky bluegrass
	Dichondra
	St. Augustinegrass
	Tall fescue
	Perennial ryegrass
	Red fescue
	Colonial bentgrass
Partial	Weeping alkaligrass

**13. ESTABLISHMENT RATE
(time needed to cover)**

	Fast	Perennial ryegrass
		Tall fescue
		Common bermudagrass
		Dichondra
		Red fescue
		Highland bentgrass
		Colonial bentgrass
		Creeping bentgrass
		Kentucky bluegrass
		Weeping alkaligrass
		Hybrid bermudagrass
		Kikuyugrass
		Seashore paspalum
		St. Augustinegrass
	Slow	Zoysiagrass

**14. MAINTENANCE COST
AND EFFORT***

	High	Creeping bentgrass
		Dichondra
		Hybrid bermudagrass
		Kentucky bluegrass
		Colonial bentgrass
		Seashore paspalum
		Perennial ryegrass
		St. Augustinegrass
		Highland bentgrass
		Zoysiagrass
		Tall fescue
		Common bermudagrass
	Low	Kikuyugrass

*Not applicable to Red fescue and Weeping alkaligrass because of their limited use.

Turfgrass Species

(Updated 6/03)

Proper selection of a turf species is an important component of an integrated pest management program. When turf species are planted in areas where they are not well adapted, they require greater care to grow and maintain and are more susceptible to invasion by pests. The major species used for turfgrass in California are outlined below. Cultivars are continually being developed or improved. For the latest information, consult your farm advisor or local nursery. Information on establishing and maintaining a healthy stand of turfgrass is outlined in the Weed section. See the turfgrass key (UC IPM Web page <http://www.ipm.ucdavis.edu>) for help identifying turfgrass species.

BENTGRASS (*Agrostis* spp.). Two species of bentgrass commonly used for turf are colonial and creeping bentgrasses. Colonial bentgrass is best adapted to the coastal region in northern California where it is used for general lawn areas. It is a fine-textured grass with upright leaves and dense growth. Colonial bentgrass grows best in cool, humid weather, and can tolerate some shade; it has low tolerance to heat, salinity, water stress, and traffic. Colonial bentgrass requires frequent irrigation because it has a shallow root system. It tends to be susceptible to a wide range of diseases.

Creeping bentgrass is a specialty grass used for golf course putting greens, lawn bowling greens, and lawn tennis facilities. It is capable of withstanding very low cutting heights. Creeping bentgrass is a very finetextured grass with flat, narrow leaves, a bright green color, and a shallow root system. It requires a high level of nitrogen fertilization and needs to be irrigated fairly frequently because of its shallow roots.

KENTUCKY BLUEGRASS (*Poa pratensis*). Kentucky bluegrass produces a dense turf with dark green, medium-textured leaves; it spreads by rhizomes. Kentucky bluegrass grows best in fall, winter, and spring when temperatures are cool; during summer its growth slows. Kentucky bluegrass requires frequent irrigation during the summer months because of its shallow root system.

RYEGRASS (*Lolium* spp.). The species of ryegrass used for turfgrass are annual and perennial ryegrass. Annual ryegrass is used principally for overseeding bermudagrass in winter: it is well adapted to sunny conditions and survives well during the cooler months. Annual ryegrass has low heat tolerance, is coarse textured, and shiny dark green. It dies in late spring to early summer.

Perennial ryegrass is well adapted to sunny or partially shady conditions. It grows best during periods of cool temperatures and is very competitive, rapidly establishing a uniform green cover. Fall seeding is preferred. Perennial ryegrass has a bunchgrass-type growth habit, thus open areas should be reseeded. It is extremely vigorous in its growth, particularly in the seedling stage, thus minimizing weed invasion.

KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS MIX. For general lawns, mixing Kentucky bluegrass and perennial ryegrass is preferred over planting either species singly. The mixture results in a more disease-resistant turfgrass stand offering good color and year round growth. By weight, at least 15 percent perennial ryegrass seed is recommended in the mixture.

TALL FESCUE (*Festuca arundinacea*). Tall fescue is well adapted to sunny or partially shady conditions. It is coarse-textured, although newer cultivars are finer textured, but not as fine as perennial ryegrass. Tall fescue has good disease resistance and excellent tolerance to heat stress. Unlike bermudagrass or Kentucky bluegrass, tall fescue is a bunch-type grass, thus open areas need to be reseeded. The extremely vigorous growth of improved turf-type tall fescue cultivars is a deterrent to weed invasion, although the very "dwarf" (slow-growing) varieties may be less competitive.

FINE FESCUES (*Festuca* spp.). Fine fescues are cool-season turfgrasses that can have either a clumped or creeping type of growth. These grasses have a very fine texture because their leaf blades are very narrow. Several species of fine fescues are used as turfgrasses in California: creeping red fescue (*Festuca rubra*), Chewings fescue (*F. rubra commutata*), and hard fescue (*Festuca longifolia*). Fine fescues make a dense, wear-resistant turf when well established. They are usually mixed with other turf species because

they tolerate shade well and fill in shady areas. Fine fescues do not like excessive nitrogen and are often mowed at 1.5 to 2.5 inches to tolerate heat in California. However, hard fescue, as well as red fescue, can be left unmowed as ornamental ground covers or on slopes and other hard-to-mow areas.

COMMON BERMUDAGRASS (*Cynodon dactylon*). Common bermudagrass is drought tolerant and well adapted to sunny conditions. It is a medium, coarse-textured grass with a gray green color, but it becomes dormant and loses its color in cold weather. Common bermudagrass establishes a deep root system and produces long rhizomes and stolons. Plant common bermudagrass in spring or summer at a rate of 1 lb seed/1000 sq. ft. Common bermudagrass requires frequent mowing to maintain an attractive quality. It has good wear quality when it is growing, but produces heavy thatch and can produce thatch in light traffic areas. There are new seeded cultivars of common bermudagrass that have improved turfgrass quality characteristics.

HYBRID BERMUDAGRASS (*Cynodon spp.*). Cultivars of hybrid bermudagrass include Tifgreen, Tifway II, and Santa Ana. All hybrid bermudagrass cultivars form thatch that must be removed periodically by verticutting. Hybrid bermudagrasses are drought tolerant, but good irrigation practices will enhance their competitiveness.

Tifgreen is well adapted to sunny conditions. It becomes dormant and loses color during periods of cold temperatures, but less than common bermudagrass. This cultivar is fine textured with dense, prostrate growth. It produces few seed heads and has a deep blue green color.

Tifway II is also well adapted to sunny conditions. It retains its color in winter better than any of the other bermudagrasses. This cultivar has a medium fine texture, a dark green color, and dense growth; it can withstand traffic better than Tifgreen.

Santa Ana has excellent wear characteristics and a dark color. Its requirements are similar to those of the other hybrids, but Santa Ana is more tolerant of smoggy conditions.

KIKUYUGRASS (*Pennisetum clandestinum*). Kikuyugrass is well adapted to coastal regions within fifty miles of the ocean in southern California and central California. It has spread to some of the inland valleys as well. Kikuyugrass is a coarse-textured, hairy, light green, perennial, warm-season grass that spreads aggressively by very thick rhizomes and stolons; its leaves are coarse textured and hairy. Kikuyugrass has good drought, heat, and wear tolerance, but it is difficult to mow and is prone to thatch heavily. Because of its aggressive growth it is a weed in some situations.

ST. AUGUSTINEGRASS (*Stenotaphrum secundatum*). St. Augustinegrass is well adapted to areas with full sun or moderate shade; it is the most shade tolerant warm-season grass. It is a coarse-textured, creeping grass of medium green color. St. Augustinegrass is propagated by stolons and forms a dense, prostrate turf that is virtually weed free, but thatch is a severe problem. St. Augustinegrass frequently needs iron as a fertilizer supplement. It is relatively drought tolerant.

ZOYSIAGRASS (*Zoysia japonica*). Zoysiagrass grows well in full sun, although it is tolerant of moderate shade. Zoysiagrass is medium textured, dark green in color, and is slow to establish from stolons or rhizomes. It turns brown when it is dormant in winter. Zoysiagrass is an attractive, uniform, dense, lowgrowing, good quality grass that requires less fertilization than bermudagrass. Zoysiagrass is moderately deep rooted and thus requires infrequent irrigation. Vertical mowing is needed periodically to reduce excessive thatch and scalping.

DICHONDRA (*Dichondra micrantha*). Dichondra will grow in partial shade, but it does best in full sun under cool coastal conditions. It is not a turfgrass but a low-growing perennial, broadleaf ground cover. Mowing dichondra is a matter of personal preference, it may either remain unmowed or be mowed. Dichondra has a deep root system when properly irrigated. Frequent irrigation to maintain dichondra increases weed invasion; it is also very susceptible to flea beetles.

CLOVERS

Integrated Pest Management for Landscape Professionals and Home Gardeners

Clover is a broad term that refers to plants in three genera: *Trifolium*, *Medicago*, and *Melilotus*. Each of these plant genera contains clover species that are troublesome in turfgrass and ornamental areas.

Clover plants have a symbiotic relationship with a bacterium in the *Rhizobium* genus that allows them to fix atmospheric nitrogen and store it in root nodules, which is why clover can maintain a dark green color even under low nitrogen fertility. Turfgrass growing in soil that is low in nitrogen may receive supplemental nitrogen from clover plants as old clover roots die and decay or if the root system is injured.

PROBLEM

Clover can be a concern in turfgrass or landscaped areas for at least three reasons. First, during the flowering period bees are attracted to the clover blooms and people playing or using the turfgrass may be stung. Second, clovers reduce the uniformity of the turfgrass because its texture, color, and growth rate are different from that of grasses. And third, burclover has soft, spiny fruit that are objectionable when the burs mature; the burs are also a problem when they become attached to the fur of pets.

IDENTIFICATION AND BIOLOGY

Depending on the species, clovers may have an annual or perennial life cycle. Both annual and perennial clovers begin to germinate in fall when soil temperatures are in the 50° to 60°F range. Germination continues throughout the winter and early spring

months. Winter rainfall will sustain the annual clovers, but irrigation is required for survival of the perennial species during the dry summer months. A weed commonly confused with clovers is *Oxalis*. *Oxalis* has small yellow flowers and does not have the ability to fix nitrogen. For more information on *Oxalis* species, see *Pest Notes: Creeping Woodsorrel and Bermuda Buttercup* listed in "References."

Annual Clovers. Annual clovers that typically cause problems in turfgrass include black medic (*Medicago lupulina*) and California burclover (*Medicago polymorpha*). Another of the annual clovers, little hop clover or shamrock clover (*Trifolium dubium*), is sometimes planted as part of a turfgrass mixture.

Annual clovers grow mostly in a prostrate manner, even without mowing (Fig. 1). Burclover and black medic have trailing stems that branch from the base and radiate out from a single taproot. The compound leaves have three oval-shaped leaflets that are finely toothed with prominent veins (Fig. 2). The central leaflet has a short stem whereas the other two are almost stemless. Flowers are small, bright yellow, and borne in clusters at the end of a stem. In black medic, a single seed is produced in a smooth, small brown to black pod. The burclover seedpod is light brown and either spiny or smooth, but it is curved and contains several seeds.

Sweetclovers. Sweetclovers, including white sweetclover (*Melilotus alba*) and yellow sweetclover (*Melilotus officinalis*), are typically more of a problem in ornamental areas than in turfgrass.

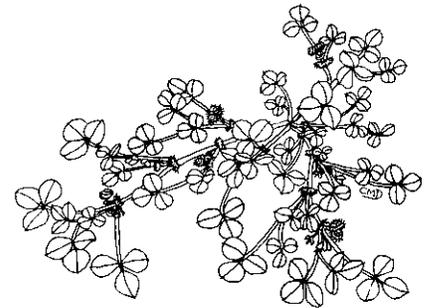


Figure 1. California burclover.

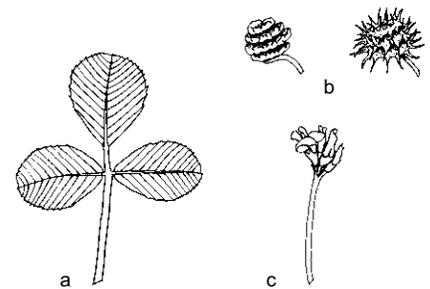


Figure 2. Leaf (a), seedpods (b), and flowers (c) of California burclover.

Sweetclovers are winter annuals or biennials that normally grow from 2 to 5 feet tall (Fig. 3). They have a trifoliate leaf with the leaf margins toothed more than halfway back from the tip (Fig. 4). The flowers are small, yellow or white (depending on the species) and are produced in a many-flowered terminal and in leaf axils. The small pods have one seed.

Perennial Clovers. The perennial white clover, *Trifolium repens*, is most often found as a turfgrass weed, but it

and strawberry clover, *Trifolium fragiferum*, are sometimes planted in a mixed stand with turfgrass to reduce the need for nitrogen fertilizer application.

White and strawberry clovers have a creeping stem system (Fig. 5) that roots at the nodes (joints in the stem), forming large clumps. White clover leaves are trifoliate with ¼- to ½-inch-long leaflets (Fig. 6). The flowers of white clover are formed in heads that are white to pale pinkish. Strawberry clover is a more robust plant than white clover and thus more aggressive. The leaves are mostly basal with the leaflets longer and narrower than white clover. The pink flowers are borne in heads that are less showy than white clover.

MANAGEMENT

Clovers are relatively easy to control in the home garden by hand-pulling, cultivation, and the application of mulch. In large, landscaped areas herbicides may also be necessary. Because clover seed has a hard seed coat that is very heat tolerant, composting and solarization are not as effective in reducing clover's seed viability as they are with other weed species. (However, seeds of black medic and burclover are more sensitive to heat than seeds of sweetclovers.) The hard seed coat also allows the seeds to survive longer in the soil than many other weed seeds; clover seeds can germinate over many years, making the control of these plants an ongoing effort.

Once clovers are controlled, change cultural practices in the landscape and turfgrass to reduce the chance of rein-

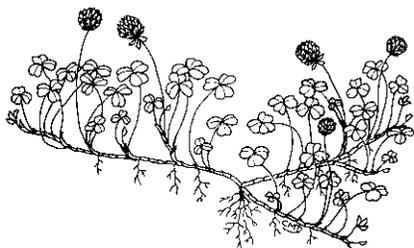


Figure 5. White clover.

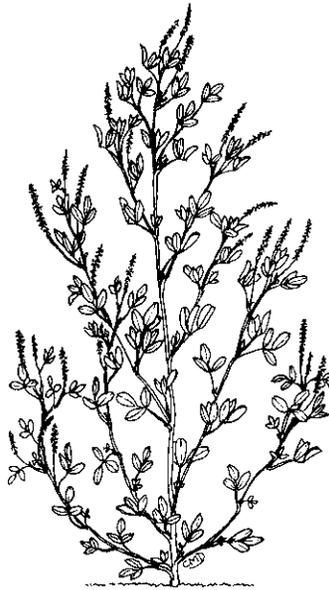


Figure 3. Yellow sweetclover.

festation. For instance, adjust the fertilizer program to include more nitrogen and less phosphorus in turfgrass or use mulch in landscapes.

Landscaped Areas. Annual clovers can be easily controlled by hand-pulling, hoeing, or cultivation. Mulching, depending upon the size and depth of the mulch, can prevent seedling establishment. Before seeds germinate, apply the mulch 2 to 4 inches deep, depending on the size of the particles (smaller particles, less depth). Mulch can also

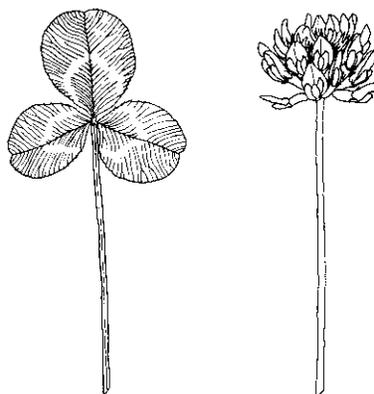


Figure 6. Leaf and flowers of white clover.

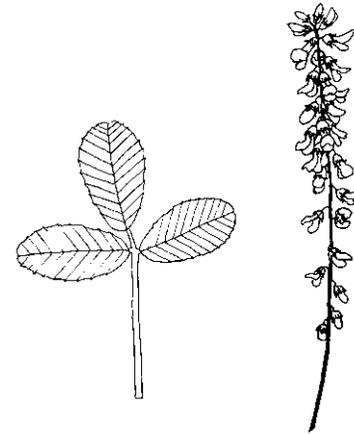


Figure 4. Leaf and flowers of yellow sweetclover.

be applied after the seedlings have germinated but must be applied more thickly (4–6 inches) and must cover the plants completely to block out all light. Larger plants are more difficult to control with mulching, but they can be hand-pulled or hoed.

Preemergent herbicides available for landscape use are effective but generally unnecessary in the home landscape where annual clovers are easily controlled by the methods mentioned. For landscape professionals, herbicide formulations that contain isoxaben are effective for controlling annual clovers and can be used around many woody shrubs and trees. Most established annual flowers tolerate this herbicide. Herbicide formulations containing oryzalin, trifluralin, or pendimethalin will control most grass species and some broadleaf weeds, such as annual clovers, but will miss many other broadleaf species (mustard, aster, legume, and cheeseweed families).

Postemergent control of clover is difficult. If the seedlings are small, glyphosate can be used in open areas provided desirable plants are not sprayed. Once annual clover plants get to 3 to 4 inches in height, control with herbicides is more difficult. The top may be burned, but the plant often regrows. None of the herbicides used

in turfgrass for clover control is safe to use in ornamental plantings because they can damage desirable plants.

Perennial clovers can also be controlled with glyphosate when the plants are seedlings, but once the clover is established, it cannot be controlled except by digging it out. Glyphosate at high rates will suppress some clovers.

Turfgrass Areas. Yellow turf and green clover is a good indication of low nitrogen fertility. The invasion of clover into turfgrass can be reduced by using levels of nitrogen fertilizer that will promote grass growth but not the growth of clover; this can be achieved by applying 1 pound of active nitrogen per 1,000 square feet of turfgrass during each month of active turfgrass growth (not to exceed 6 lb active nitrogen/1,000 sq ft/year). Also, high phosphorus in the soil promotes the

invasion of clovers. Clover in established turfgrass can not be controlled by fertilization or mowing of the grass. Once clover is established, the annual clovers can be controlled by hand-pulling before seeds are formed. Hand-pulling will need to be repeated as new germination occurs and desirable turfgrass planted in weeded areas.

Both established annual and perennial clovers can be controlled with post-emergent herbicides. The best herbicide to use depends upon the species of turfgrass. Warm-season turfgrasses such as bermudagrass, zoysiagrass, and kikuyugrass will tolerate products containing mecoprop and dicamba but not tricopyr. Cool-season turfgrasses will tolerate all of the herbicides that control clover. The herbicide 2,4-D is not effective for clover control; it will injure the plant but does control it.

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For more information contact the University of California Cooperative Extension or agricultural commissioner's office in your county. See your phone book for addresses and phone numbers.

AUTHORS: C. L. Elmore and D. W. Cudney
EDITOR: B. Ohlendorf
TECHNICAL EDITOR: M. L. Flint
DESIGN AND PRODUCTION: M. Brush
ILLUSTRATIONS: Christine M. Dewees

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Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

Do not place containers containing pesticide in the trash nor pour pesticides down sink or toilet. Either use the pesticide according to the label or take unwanted pesticides to a Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Household Hazardous Waste Collection site nearest you. Dispose of empty containers by following label directions. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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APPENDIX 3
LETTER FROM STATE OF CALIFORNIA, OFFICE OF
HISTORIC PRESERVATION

The attached letter is a response from the State of California SHPO regarding the Final Review Draft of the Cultural Landscape Report for John Muir National Historic Site.

Mr. Blackburn
July 13, 2005
Page 2

the extant outbuildings. Emphasis should be placed on the use of compatible materials rather than a strict replication of the buildings' style.

- The remnant orchards, trails, and the bungalow at the Strain Ranch appear to require additional evaluative efforts to determine their linkage, if any, with the Muir occupancy of the property. The treatment plans does not clearly indicate the potential significance that may have attached to this resource and proposed mitigation if these resources are removed.

Thank you for considering historic properties during project planning. If you have any questions, please contact Kelly Hobbs at (916) 653-8936 or by e-mail at khobb@ohp.parks.ca.gov.