

Environmental Assessment for the John Muir National Historic Site Improvements Project



*"A day in the mountains
is worth a mountain
of books."*

John Muir

TABLE OF CONTENTS

1.0	Purpose and Need.....	4
1.1	Introduction.....	4
1.2	Purpose and Need.....	4
2.0	Alternatives.....	9
2.1	Preferred Alternative.....	9
2.2	Alternative 2.....	15
2.3	Alternative 3 (No Action Alternative).....	16
2.4	Alternatives Considered but Dismissed from Further Review.....	16
2.5	Environmentally Preferred Alternative.....	17
3.0	Affected Environment.....	28
3.1	Consistency with Previous Planning Documents.....	28
3.2	Visitor Safety and Experience.....	29
3.3	Historic Landscape.....	31
3.4	Park Operations.....	36
3.5	Water Smell and Taste at the Maintenance facility.....	37
4.0	Environmental Impacts.....	38
4.1	Methodology for Assessing Impacts.....	38
4.2	Visitor Safety & Experience.....	40
4.3	Historic Landscape.....	42
4.4	Park Operations.....	46
4.5	Water Smell and Taste at the Maintenance facility.....	48
5.0	Consultation and Coordination.....	51
6.0	References.....	53

List of Tables

Table 1: Summary of Alternatives and Impacts.....	19
Table 2: Mitigation Matrix.....	22
Table 3: Topics Dismissed from Review.....	23
Table 4: Agencies and Organizations Sent an EA.....	51

List of Figures

Figure 1: John Muir NHS Vicinity Map.....	6
Figure 2: John Muir NHS, House Unit Project Area.....	7
Figure 3: John Muir NHS, Mount Wanda Project Area.....	8
Figure 4: Proposed Design for Parking Lot.....	11
Figure 5: General Location of Proposed Spur Trail.....	13
Figure 6: Approximate Gate Location for Spur Trail.....	13
Figure 7: Paved Trail Identified for Possible Re-surfacing.....	15
Figure 8: Fallen Eucalyptus Branch in Proposed Parking Area.....	17
Figure 9: Visitor Center Parking Lot: Existing Condition.....	30
Figure 10: Existing Landscape Conditions, House Unit.....	33
Figure 11: Eucalyptus Trees.....	35

1.0 Purpose and Need

1.1 Introduction

This Environmental Assessment (EA) evaluates potential environmental impacts from proposed improvements at John Muir National Historic Site (John Muir NHS), a unit of the National Park Service. John Muir NHS is located in Martinez, California, approximately 35 miles north east of San Francisco (Figure 1) and preserves the residence and remnants of John Muir's farm.

John Muir NHS is composed of a series of lands acquisitions. In August 1964, the NPS acquired 8.8 acres of land, including the Muir family home, Martinez Adobe, and a remnant part of the orchards and vineyards of the Strentzel-Muir ranch (entitled House Unit in this EA). In 1993, the NPS purchased an additional 326 acres that was once part of the Strentzel-Muir ranch, with the highest peak on the property named Mount Wanda, after Muir's oldest daughter (entitled Mount Wanda in this EA). Also in 1993, John Muir NHS acquired 3.3 acres from the City of Martinez (entitled the City Tract in this EA). John Muir NHS acquired a 1.3 acre parcel containing a remnant pear orchard and a small family burial area including the grave site of John Muir (the grave site is not affected by this proposal). A trail currently connects Mount Wanda to the House Unit; traversing underneath State Route 4 (entitled Tunnel Trail in this EA). The House Unit, Mount Wanda, and Grave site preserve important pieces of the property that originally encompassed approximately 2,600 acres.

1.2 Purpose and Need

The purpose of the proposal is to improve the facilities at the John Muir NHS to better serve visitors and to better represent the historic scene. The goal of the proposal is to:

1. Better connect the House Unit to Mount Wanda
2. Provide an alternative parking site, suitable for busses and reduce parking in the Visitor Center parking lot
3. Reduce overflow parking in the adjacent neighborhood
4. Remove asphalt from selected paths in the House Unit and replace with an alternate surface to better represent the historic landscape and improve aesthetics
5. Provide alternatives to improve the smell and taste of drinking water at the Facility Maintenance Building
6. Implement elements of the 1991 General Management Plan / Environmental Assessment (GMP/EA)

The proposal is needed to address the on-going physical inadequacies of the unit that affect the visitor experience and take away from the historical scene. Currently, visitors are not encouraged to access Mount Wanda from the House Unit and vice-versa because the Tunnel Trail is unimproved

including the section underneath State Route 4, is inaccessible to handicapped persons, there are no NPS parking facilities at Mount Wanda, and there are no sidewalks or designated crossings on Franklin Canyon Road or Canyon Way. Visitors are overlooking Mount Wanda, missing an opportunity for greater understanding of John Muir NHS and for recreational activity. Although there is a pedestrian tunnel under State Route 4, the approach paths on either side are steep, rough, with an uneven surface. State Route 4 has irrevocably separated the House Unit from Mount Wanda. A goal of this proposal is to partially repair that connection by providing a practical trail system that connects the House Unit to Mount Wanda by providing trailhead parking, improving the Tunnel Trail, and adding a new section of trail for connectivity (entitled Spur Trail in this EA).

Parking in the Visitor Center's lot quickly fills on weekends and many weekdays during good weather requiring visitors to park on the nearby streets disrupting neighbors. Currently, busses bring groups of visitors and schoolchildren to the parking lot on Alhambra Avenue. Because of the design of the parking lot only one bus can fit, leading to safety hazards, traffic congestion, and parking on the adjacent streets. Additionally, the Visitor Center parking lot requires busses to back in or out, a hazardous maneuver around school groups. Construction of a parking lot on Franklin Canyon Road will allow groups to be dropped off at the Visitor's Center, experience the House Unit and the Martinez Adobe, walk the Tunnel Trail, and meet the busses at Mount Wanda. After dropping off school groups in an existing pullout on Alhambra Avenue, busses would drive to the proposed parking lot, which is designed to safely turn and park two busses, to await the return of school groups. A foot path along Franklin Canyon Road would connect the proposed parking with the main trailhead for accessing Mount Wanda.

Other actions included in this project address a variety of needed improvements. The main trails at the House Unit are asphalt, not accurately representing the period of historical significance. This project includes replacing the asphalt with a more appropriate surface. The smell and taste of the potable water at the recently constructed Facility Maintenance facility is unpleasant, this project includes actions to address this need. There is also a need to implement the 1991 General Management Plan for John Muir NHS that called for the proposed parking lot and improvements to the Tunnel Trail included in the Preferred Alternative and Alternative 2.

Figure 1: John Muir NHS Vicinity Map

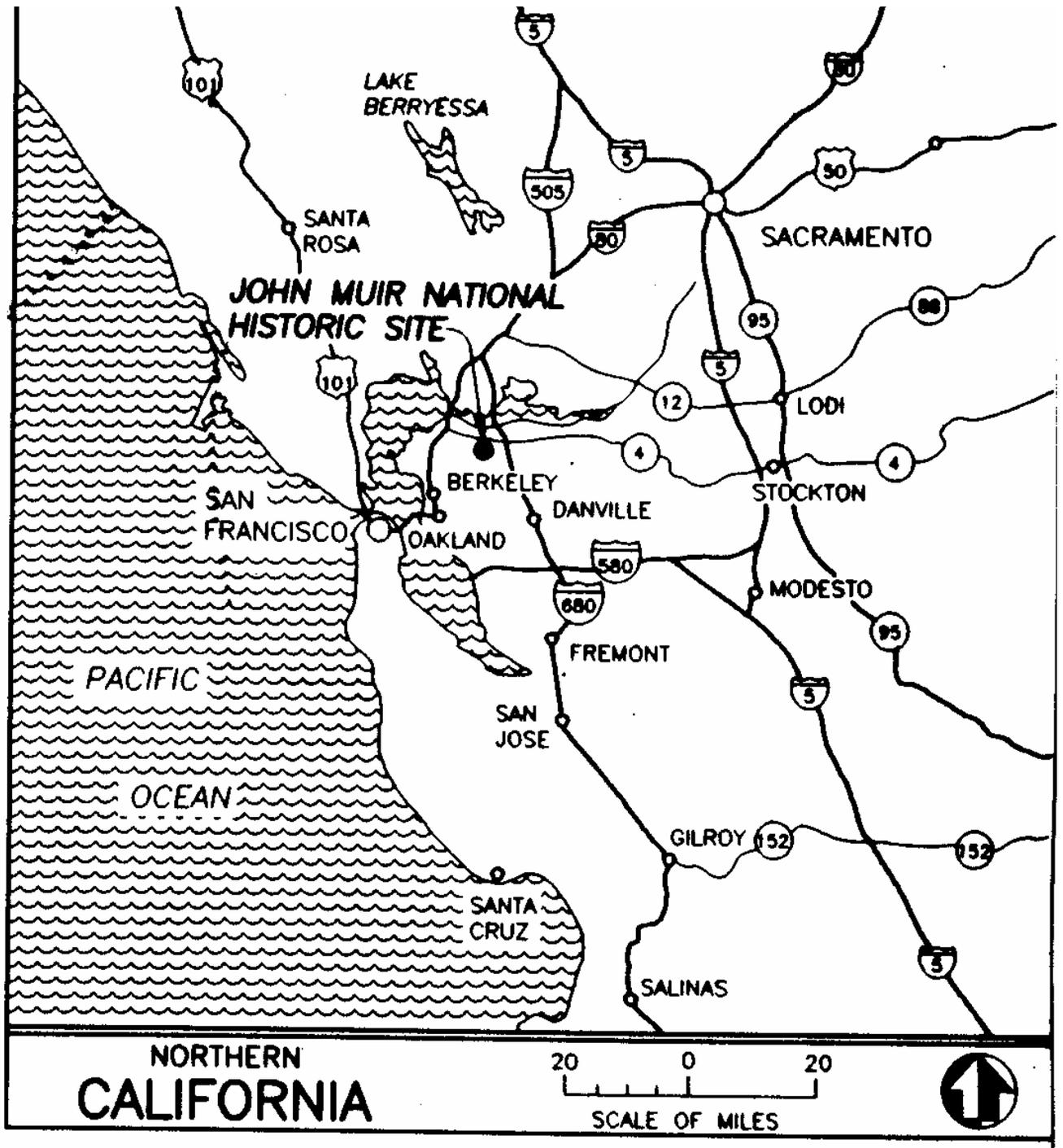


Figure 2: John Muir NHS, House Unit Project Area

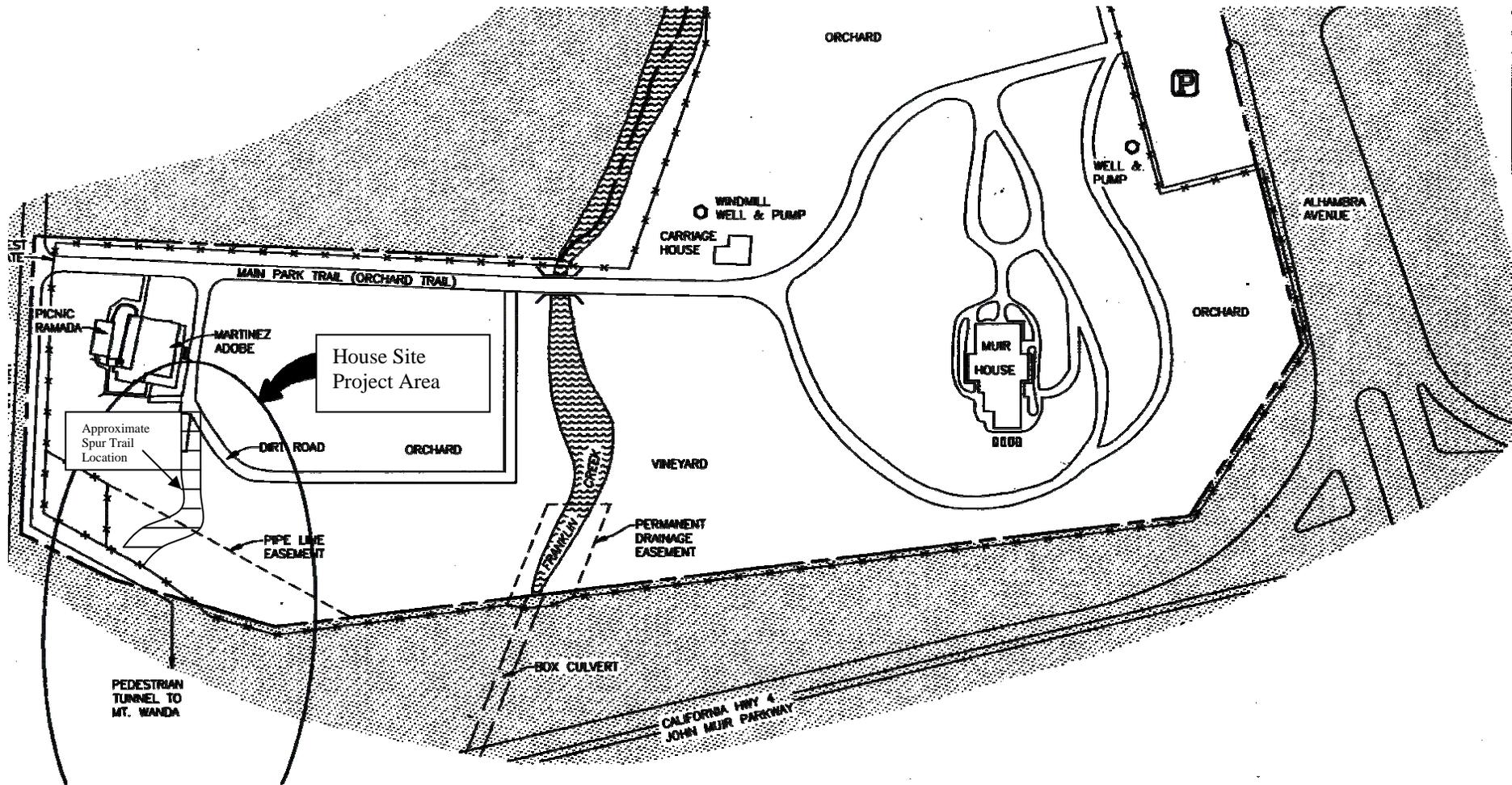
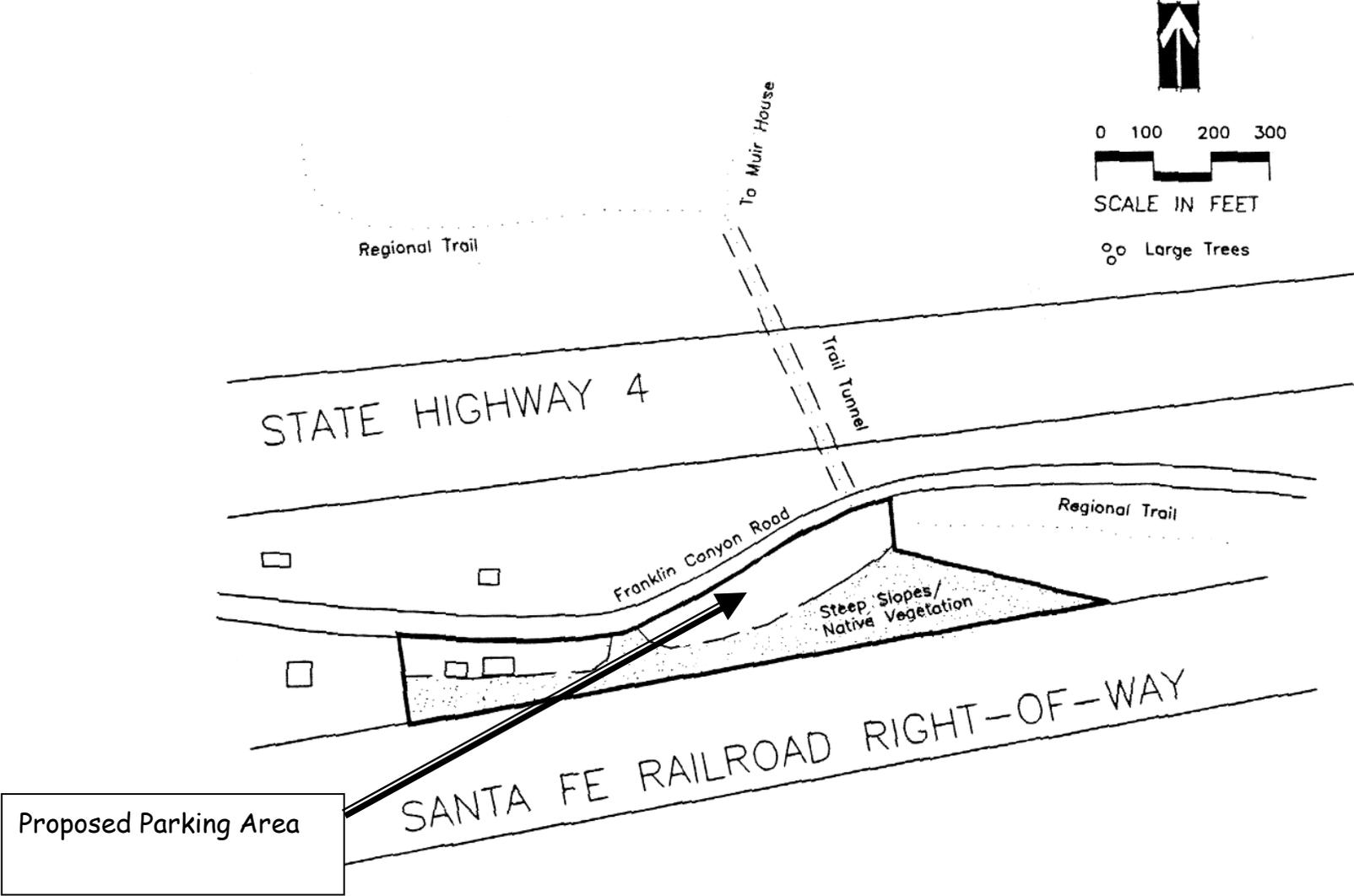


Figure 3: John Muir NHS, Mount Wanda Project Area



2.0 Alternatives

This chapter identifies two potential action alternatives to meet the purpose and need for the project and the no action alternative. NPS will use the analysis in the EA along with input from individuals, organizations, and agencies to reach a final decision that will be presented in the Finding of No Significant Impact (FONSI) or the NPS will start preparation of an Environmental Impact Statement (EIS). The final alternative may include elements taken from each alternative in order to meet the goals of the project and reduce adverse environmental impacts.

2.1 Preferred Alternative

Construction proposed in the Preferred Alternative or Alternative 2 would begin in spring 2005 and last approximately three to four months to construct the proposed parking lot and improvements to the Tunnel Trail. Resurfacing the asphalt trails at the House Unit and resolution of the drinking water issue at the Facility Maintenance Building would occur as funding is acquired, likely within five years.

Parking Lot on Franklin Canyon Road

The primary element of the Preferred Alternative is the construction of an asphalt surface parking lot on Franklin Canyon Road (Figure 4). The parking lot proposed is approximately 360 feet long and 75 feet wide, with parking spaces for 33 cars and 2 busses, including two handicapped parking spaces. Cars could enter and exit from either end of the parking lot, located just east of the new Facility Maintenance building on Franklin Canyon Road. The lot is designed to accommodate vehicles and busses for visitors to the House Unit and provide trailhead parking for recreational activities, including hiking, mountain biking, and equestrian use of Mount Wanda and nearby open space areas. Additionally, the lot would connect with trails maintained by the East Bay Regional Park District and the Bay Area Ridge Trail. Vehicle gates will be installed at the parking lot entrances and left open sunrise to sunset.

Construction of the lot would require minimal grading because the unit is generally level and the proposal does **not** require excavation into the adjacent hillside. There is sufficient space to stage construction materials and vehicles at the site or in the parking lot of the adjacent Maintenance Facility. It is anticipated that construction will **not** require closure Franklin Canyon Road, however, construction vehicles will be entering and existing the proposed parking lot area, requiring flag people to warn on coming traffic to slow down. Signs will be placed on Franklin Canyon Road at each end of the construction unit warning of construction activity. Fire extinguishers and/or a water truck, during spark producing activities, will be on unit to extinguish errant embers. In addition, construction activities would avoid the leach fields that serve the Maintenance Facility that are located approximately south-east of the proposed parking lot.

Untreated storm water can impact water quality due to automobile fluids and metals from brakes and other sources. To reduce the potential for impact, NPS is proposing to implement Best Management Practices for storm water control. The NPS will choose the most appropriate BMP as

design proceeds; however a vegetated swale is being considered to slow storm water and filter pollutants. A regular maintenance schedule would be established to clean the vegetated swale. Receptacles would be provided for garbage, recycling, horse manure, and doggy bags and visitors will be expected to clean up their waste.

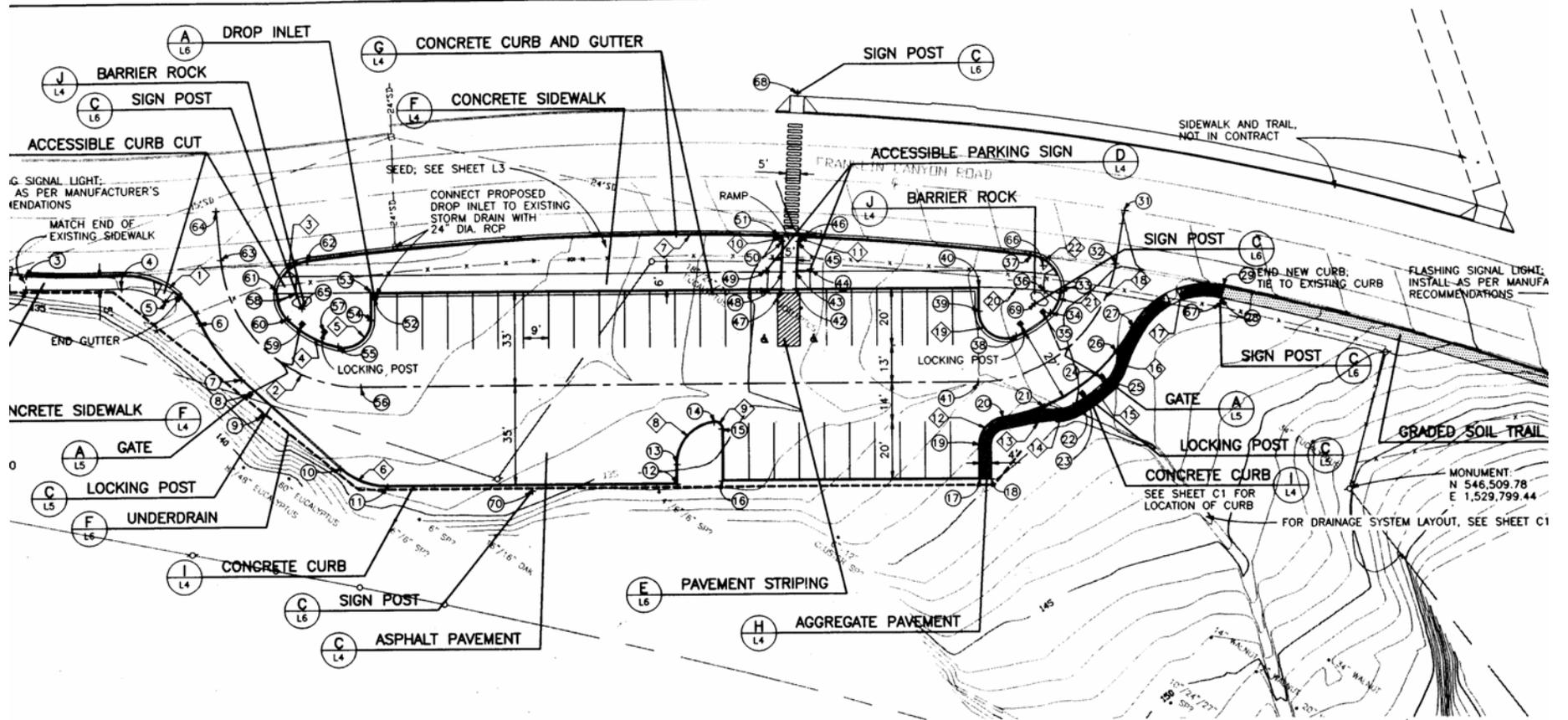
Four large eucalyptus trees near Franklin Canyon Road, including the largest that sits directly in the center of the proposed parking lot, would be removed for construction. The NPS considered designing the lot around the tree however; it became apparent that the proposed parking lot and large eucalyptus cannot coexist in the same area because the crown spread of the tree and the potential health and safety challenges (see *Alternatives Considered but Dismissed from Further Review*).

In planning for the proposed parking lot, a boundary survey discovered that a small triangle of land (approximately 9,500 square feet (SF) or 0.2 acres) of the proposed parking area site is not under National Park Service ownership. During the 1991 GMP planning process, it was assumed that the lands south of Franklin Canyon Road had been transferred to the park and would be available to support the proposed parking facility. It appears that in the 1960's when the California Department of Public Works (now CalTrans) was acquiring lands for right of way for the State Route 4, a larger parcel was acquired in fee from the estate of a "Mary Pereira". The far southeast corner of that larger parcel, comprising approximately 9,500 SF apparently was not acquired in fee, but was only acquired with a temporary construction easement. The temporary easement expired on December 31, 1967, but the owner apparently was unaware that this portion of the parcel had not been acquired in fee. Nor was the Contra Costa County Assessor aware of it, as a parcel number has never been assigned to it, and no property taxes have ever assessed or paid on it.

Since the boundary survey, the NPS has been unable to locate the previous owner or heirs and because there is no apparent owner, the NPS cannot purchase nor acquire the land. Thus legislation is currently in Congress for a boundary adjustment to move the Park boundary line northward, approximately 80 feet to the south edge of the Franklin Canyon road right of way. If the boundary of John Muir NHS is expanded and once the "owner-less" parcel is within the boundary of John Muir NHS, it can be acquired through eminent domain proceedings (condemnation) or the land can be purchased (if an heir to the former owner is found). However, before the land could be purchased county and city back taxes would be required to be calculated for the parcel.

Tree removal and related site work would not be contracted nor accomplished until after the triangle of land has been conveyed to the park. This EA provides the NEPA compliance for this acquisition.

Figure 4: Proposed Design for Parking Lot



Improvements to the Tunnel Trail and New Proposed Spur Trail

New sidewalks and a crosswalk will be installed on Franklin Canyon Road to safely convey visitors from the parking lot to the Tunnel Trail. The sidewalks will be five feet wide and yellow flashing caution lights will be installed in each direction warning traffic of the crosswalk (Figure 4). Two weeks prior to the opening of the crosswalk a special message signs will be placed in each direction informing motorists of the new crosswalk. The curbs will be cut on each side of the crosswalk for handicapped persons and to allow small equipment to be moved through Tunnel Trail. The City of Martinez manages Franklin Canyon Road and the National Park Service will be required to coordinate to make these changes.

The Preferred Alternative also includes paving the Tunnel Trail surface with a harden surface, like asphalt or concrete. The tunnel is managed by the East Bay Regional Park District and this work will require coordinating with that agency. The Tunnel Trail is part of the California Riding and Hiking Trail and the segment along the southwest corner of the House Unit that is proposed for paving or concrete is about 10 to 12 feet wide and currently is an unimproved gravel surface in poor condition with many ruts. The asphalt would continue to a new pedestrian gate installed in the fence near the junction of the Tunnel Trail and Canyon Way. The new gate connects to a proposed new Spur Trail (Figure 2) that takes visitors into the House Unit near the Martinez Adobe. The gate may be equipped with an intercom to the Visitor Center with an electronic lock that can be opened remotely, be staffed by a volunteer or ranger, or be opened intermittently for organized groups. The proposed Spur Trail would have the following characteristics:

- Pedestrian trail six feet wide,
- Hardened surface, likely paved nearest the gate for accessibility
- ADA compliant
- Designed to be sensitive to the historic landscape
- Include the minimum grading and fill required to construct a safe and accessible trail
- Vehicles will not be allowed on the Spur Trail
- Up to three lemon trees may be removed to install the trail, however, the trail design will attempt to avoid removing trees

It is anticipated that maintenance staff will use the Tunnel Trail to move small maintenance vehicles (mowers, small tractors, etc.) from the Maintenance Facility, adjacent to the proposed parking lot, to the House Unit through the tunnel. The road edge, crosswalk, and improved trail will be used by NPS maintenance vehicles to traverse from the Maintenance Facility to the House Unit under the following conditions, also proposed as mitigation measures:



Figure 5: General Location of Proposed Spur Trail



Figure 6: Approximate Gate Location for Spur Trail

- Mitigation Park Operations (PO) #1: During normal operations, maintenance vehicles will be moved early in the day and late in the day to avoid the busiest times.
Responsibility: NPS Maintenance Division
- Mitigation PO#2: While NPS employees transition to using the tunnel, two employees will be present when moving maintenance equipment through the tunnel. New NPS employees will be trained to safely move equipment through the tunnel.
Responsibility: NPS Maintenance Division
- Mitigation PO#3 Large maintenance equipment, like a tractor, will not be allowed on the Spur Trail, but would continue to Canyon Way, turn right and enter the House Unit through the vehicle gate. Smaller equipment, like a hand push mower, could use the Spur Trail.
Responsibility: NPS Maintenance Division

Improvements to the House Unit Trail System

In addition to the Spur Trail, the NPS is evaluating the paved walks within John Muir NHS and considering replacing the asphalt surface on gently sloping trail segments, for example, less than five percent grades, with a material that better reflects the ranch scene and is inviting to visitors. The new surface will be sensitive to the historic landscape and approved by NPS Historic Landscape Architects.



Figure 7: Paved Trail Identified for Possible Re-surfacing

Water Taste and Smell at the Facility Maintenance facility

There are four options for addressing the water quality at the Facility Maintenance facility:

1. No Action (Preferred) The NPS would continue to use the current water system.
2. Resume using 45-foot well that was abandoned when the new Facility Maintenance facility came on line.
3. Treat the water that is being produced from the existing well.
4. Extend a water line through the Tunnel Trail and trench the water line from the end of the tunnel across Franklin Canyon Road to the Facility Maintenance facility. The water line extension would include tapping from the water utility.

2.2 Alternative 2

Alternative 2 is the same as the Preferred Alternative with the exception of the Improvements to the House Unit Trail System. A pedestrian gate would **not** be installed in the existing fence between the Tunnel Trail and Canyon Way and the Spur Trail would not be constructed from the Tunnel Trail to the Martinez Adobe. Rather, improvements would be completed on the Canyon Way, including a new five foot wide sidewalk to accommodate visitors safely from the Tunnel Trail to the existing gate on Canyon Way and a vehicle turnaround would be constructed at the cul-de-sac on Canyon Way to improve motorist and pedestrian safety. Alternative 2 was developed to avoid the

potential impacts to the historic landscape that are discussed in the Historic Landscape Section 4.2. Alternative 2 would require approval from the City of Martinez to construct improvements on Canyon Way.

2.3 Alternative 3 (No Action Alternative)

The status quo would be maintained and the elements identified under the Preferred Alternative and Alternative 2 would not be constructed.

2.4 Alternatives Considered but Dismissed from Further Review

NPS considered removing the parking lot from the project to avoid the potential for impacts to the historic landscape. It was dismissed because it would not resolve the need for the action or fulfill the stated purpose in taking the action to a large degree. Specifically, goals one, two, three, and six would not be achieved:

1. Better connect the House Unit to Mount Wanda
2. Provide an alternative parking site, suitable for busses and reduce parking in the Visitor Center parking lot
3. Reduce overflow parking in the adjacent neighborhood
4. Remove asphalt from selected paths in the House Unit and replace with a alternate surface to better represent the historic landscape and improve aesthetics
5. Provide alternatives to improve the smell and taste of drinking water at the Facility Maintenance Building
6. Implement elements of the 1991 GMP/EA

NPS also looked at designing the parking lot around one of the large Eucalyptus trees located directly in the center of the proposed parking area however; it became apparent that the proposed parking lot and large eucalyptus cannot coexist in the same area because the crown spread of the tree and the potential health and safety challenges. Eucalyptus has a tendency for "summer drop", meaning limbs will sometimes break off the tree and drop without warning and in good weather (Figure 8). Even if the tree were adequately pruned and maintained it would not be prudent to allow public use, especially school groups, to use the site around the tree. A fence would have to be constructed about 25 feet from the base of the tree, effectively eliminating adequate space for parking.



Figure 8: Fallen Eucalyptus Branch in Proposed Parking Area

2.5 Environmentally Preferred Alternative

In accordance with NPS Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*, the NPS is required to identify the "environmentally preferred alternative" in environmental documents. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA) of 1969, which is guided by the Council on Environmental Quality (CEQ). The CEQ (46 FR 18026 - 46 FR 18038) provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101", which considers:

1. fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA Section 101(b)).

The Council on Environmental Quality states that the environmentally preferable alternative is “the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 - 46 FR 18038).” According to NPS NEPA Handbook (DO-12), through identification of the environmentally preferred alternative, the NPS decision-makers and the public are clearly faced with the relative merits of choices and must clearly state through the decision-making process the values and policies used in reaching final decisions.

NPS decision-makers attempt to strike a balance competing interests. In this case, the Preferred Alternative is clearly consistent with NEPA criteria two, three, and five, in particular providing a safe and healthful environment for our visitors. In addition, it is arguably consistent with criteria one, in fulfilling trustee responsibilities in managing the environment. There are, however potential adverse impacts to historic landscape that are directly addressed in NEPA criteria four. These impacts could include removing a tree that John Muir himself may have planted. In weighing these choices the NPS decision-makers selected the Preferred Alternative as the environmentally preferred alternative because it balances and attempts to reduce adverse impacts to the historic landscape with NPS caretaker duties to the visitors. It is also appropriate to look at the choices made by earlier NPS professionals, and the parking lot was clearly identified as a priority in the 1991 GMP/EA at this location. Additionally, the landscape surrounding the trees has dramatically changed including a six lane freeway, two lane paved frontage road, suburban development of former ranch lands, each influencing the identification of the Preferred Alternative.

Table 1: Summary of Alternatives and Impacts

Resource Topic /Consultation Requirement	Preferred Alternative	Alternative 2	No Action Alternative
Visitor Safety & Experience	<p>Local direct and indirect moderate, long term beneficial impact to visitor safety because busses will no longer park in the Visitor Center parking lot. Local direct and indirect, moderate, long term, beneficial impact to the Visitor Experience because of the trailhead parking allowing improved access to Mount Wanda, improvements to visitor flow at the House Unit, and improved traffic flow and circulation in and around John Muir NHS.</p> <p>Local cumulative moderate short term beneficial impacts resulting from the creation of alternative parking during Visitor Center construction.</p>	<p>Local direct and indirect moderate, long term beneficial impact to visitor safety because busses will no longer park in the Visitor Center parking lot.</p> <p>Local direct and indirect, minor to moderate, long term, beneficial impact to the Visitor Experience because of the trailhead parking allowing access to Mount Wanda, minor improvements to visitor flow at the House Unit, and improved traffic flow and circulation in and around John Muir NHS. Different level of beneficial impact (Minor rather than moderate) than the Preferred Alternative because Alternative 2 does not include the Spur Trail.</p> <p>Local cumulative moderate short term beneficial impacts resulting from the creation of alternative parking during Visitor Center construction.</p>	<p>Local direct and indirect moderate long term adverse impact to visitor safety in retaining the current parking configuration. Local indirect minor to moderate long term adverse effect on visitor experience and accessibility because of parking situation and lack of connection between House Unit and Mount Wanda.</p> <p>Local cumulative, minor to moderate, short term adverse impacts because of shortage of parking.</p>
Historic Landscape/ Archeological and Historic Preservation Act of 1974 (16 U.S.C. §469-469c);	<p>In terms of the National Historic Preservation Act (NHPA), the Preferred Alternative will likely have an effect, although not an adverse effect, upon a National Historic Landmark. The Preferred Alternative includes the removal of</p>	<p>In terms of NHPA, the Alternative 2 will likely have an effect, although not an adverse effect, upon a National Historic Landmark. Alternative 2 includes the removal of eucalyptus trees that may have been planted</p>	<p>In terms of NHPA, benign neglect could result in an effect, although not an adverse effect, upon a property listed on the</p>

Resource Topic /Consultation Requirement	Preferred Alternative	Alternative 2	No Action Alternative
<p>National Historic Preservation Act of 1966, as amended (16 U.S.C. §470-470t)</p> <p>EO 11593, Protection and Enhancement of the Cultural Environment, May 1971</p>	<p>eucalyptus trees that may have been planted in the period of significance. However, the trees are considered a solitary feature without individual distinction related to John Muir NHS, irrevocably separated from the history of the site by a freeway, frontage road, and suburban development.</p> <p>The Preferred Alternative also includes the removal of up to three lemon trees for the addition of the Spur Trail that, although not from the period of significance, reflect the agricultural history of the site. However, the Spur Trail will be designed in accordance to the Secretary of the Interior's Standard's for the Treatment of Historic Properties, Guidelines for the Treatment of Cultural Landscapes and is considered the addition of a new compatible element to a cultural landscape.</p> <p>In terms of NEPA, the Preferred Alternative could result in local direct and cumulative minor, long term, adverse impacts to the historic landscape because of the removal of the eucalyptus trees for the parking lot and construction of the Spur Trail at the House Unit.</p>	<p>in the period of significance. However, the trees are considered a solitary feature without individual distinction related to John Muir NHS, irrevocably separated from the history of the site by a freeway, frontage road, and suburban development.</p> <p>In terms of NEPA, Alternative 2 could result in a local direct and cumulative minor, long term, adverse impact to the historic landscape because of the removal of the eucalyptus trees for the parking lot.</p> <p>Alternative 2 does not include the Spur Trail, resulting in reduced potential adverse impacts compared to the Preferred Alternative.</p>	<p>National Register of Historic Places. Lack of funding for maintenance of the eucalyptus trees could result in the eventual loss of the trees.</p> <p>In terms of NEPA, the No Action Alternative may lead to local indirect and cumulative minor long term adverse impacts to the eucalyptus trees because of lack of maintenance.</p>
<p>Park Operations</p>	<p>Local direct, minor to moderate, long term beneficial impact to park efficiency by use of</p>	<p>Same as Preferred Alternative with the exception of the Spur Trail. Staffing would</p>	<p>Local direct, minor, long term adverse impact park</p>

Resource Topic /Consultation Requirement	Preferred Alternative	Alternative 2	No Action Alternative
	the tunnel to transport small equipment and materials. Local indirect and cumulative, minor, long term adverse impacts related to maintaining the proposed parking lot and intermittent staffing of the gate at the Spur Trail.	not be required to open and close the gate or monitor during special events.	operations through time and resources spent transporting equipment from the Maintenance area to the House unit.
Water Smell and Taste at the Maintenance Facility	Local direct minor long term adverse impact to the Maintenance staff from the water smell and taste.	Alternative 2 will lead to local direct negligible to minor short term adverse impacts from construction and operation of options one, two, or three. In addition, each option would likely lead to direct minor to moderate long term beneficial impacts to the desirability of the water at the Maintenance Facility. Option three may have potential indirect long term beneficial and/or adverse impacts of unknown magnitude.	Same as Preferred Alternative.

Table 2: Mitigation Matrix

Mitigation measures apply to the Preferred Alternative and to Alternative 2 (with the exception of HL1).

Mitigation Historic Landscape (HL)1	<p>In coordination with NPS Historic Landscape Architects, the Spur Trail will be designed to be a new compatible element to a cultural landscape, in accordance to the Secretary of the Interior's Standard's, including replanting up to six lemon trees if appropriate.</p> <p>Responsibility: NPS Project Manager, included as part of the project.</p>
Mitigation HL2	<p>In coordination with NPS Historic Landscape Architects, NPS will work toward replacing the asphalt surfaces on the gently sloping segments of the main farm road with a material that is consistent with the historic landscape.</p> <p>Responsibility: NPS Superintendent, on-going work using multiple funding sources.</p>
Mitigation HL3	<p>Interpretive panels will be developed and installed in an appropriate place adjacent to the parking lot, with themes that may include John Muir, the significance of Mount Wanda, the history of agriculture in the Alhambra Valley, a bulletin board, and hiking information.</p> <p>Responsibility: NPS Interpretive Staff included as part of the project or as funding becomes available.</p>
Mitigation Park Operations (PO) 1:	<p>During normal operations, maintenance vehicles will be moved early in the day and late in the day to avoid the busiest times.</p> <p>Responsibility: NPS Maintenance Division</p>
Mitigation PO2:	<p>While NPS employees transition to using the tunnel, two employees will be present when moving maintenance equipment through the tunnel. New NPS employees will be trained to safely move equipment through the tunnel.</p> <p>Responsibility: NPS Maintenance Division</p>
Mitigation PO3	<p>Large maintenance equipment, like a tractor, will not be allowed on the Spur Trail, but would continue to Canyon Way, turn right and enter the House Unit through the vehicle gate. Smaller equipment, like a hand push mower, could use the Spur Trail.</p> <p>Responsibility: NPS Maintenance Division</p>

Table 3: Topics Dismissed from Review

Resource Topic /Consultation Requirement	Reason Dismissed
<p>Archeology / Ethnographic Resources / Archeological Resources Protection Act (1979 as amended) Native American Graves and Repatriation Act Executive Order 13007 Indian Sacred Sites</p>	<p>Previous NPS archeological ground inspections and long periods of agricultural use indicate little potential for archeological resources. Within the original Historic Site parcel, terrain inspections and ground disturbance monitoring since 1967 have not yielded intact and significant aboriginal or historic period archeological materials. Scattered and fragmented historic objects are occasionally observed but these cannot be clearly associated with historic occupants or specific past activities. Formal archeological work was accomplished around the perimeter and within the Martinez Adobe in early 1980s and 1990s which yielded a few small 20th century fragmentary artifacts. At the location of the Franklin Canyon NPS Maintenance Facility and proposed Mount Wanda parking lot, archeological terrain inspections were completed. No prehistoric or historic period features or artifact were observed within the project area. Unconfirmed past land uses were apparently minor or absent given the uncertain chain of title. No archeological resources for this project area are documented in the Sonoma State University Information Center, a repository for California Historic Resources Inventory System (CHRIS) for central California, including Contra Costa County. Although the Historic Site is within the known region historically occupied by Ohlone (aka 'Costanoans') native people, there are no known local descendents of this group remaining near the project locality. Historical documents from the mid-19th and early 20th century regarding the Martinez area development and the Strenzel-Muir families do not include references to Native California people residing nearby. No historically or culturally affiliated Native Californian groups have been documented for the expanded Historic Site. Small residences for Chinese farm workers may have been located near the intersection of Alhambra Avenue and Franklin Canyon Road, but no evidence survives for this ethnic group.</p>
<p>Natural Resources/ Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq.) Fish and Wildlife Coordination Act (16 U.S.C. §661-666c)</p>	<p>NPS biologists reviewed the sensitive species list and discussed the project with other professional natural resource staff and it appears no federally threatened, endangered, proposed, or candidate species are found at the site or at the park. Two U.S. Fish and Wildlife Service (USFWS) Species of Concern, the Mt. Diablo sunflower (<i>Helianthella castanea</i>) and the California black walnut (<i>Juglans californica</i> var. <i>hindsii</i>), are found on Mount Wanda, however, neither is found in the project area. Based on the evaluation, it appears the project will have no effect on candidate, threatened, or endangered species. In addition, the removal of eucalyptus is viewed as a local direct long term minor beneficial impact to surrounding habitat because it reduces the potential</p>

Resource Topic /Consultation Requirement	Reason Dismissed
	<p>for the invasive trees to spread to Mount Wanda. No nesting activity has been observed in the trees that are proposed for removal. The parking lot may attract more visitors to Mount Wanda, but the incremental increase in risk from the introduction of nonnative species is considered a regional indirect long term negligible adverse impacts. Wildlife proof garbage and recycling cans will be installed to prevent foraging.</p>
<p>Soundscape / Noise Noise Pollution and Abatement Act (42 U.S.C. §7641)</p>	<p>The project will result in local direct long term adverse negligible impacts to the existing soundscape of Mount Wanda. Activity in the trailhead parking lot will generate some vehicular and people sounds, especially during weekend afternoons when most visitors will use the lot for trailhead access. Additionally, short term noise will be generated from construction activities, resulting in a local direct short term minor adverse impact. However, the existing soundscape includes noise from the adjacent State Route 4 and traffic on Franklin Canyon Road. Activity in the parking lot will result in a negligible increase to the existing condition and result in negligible increase in noise to neighbors and Mount Wanda. In addition, the gate will be closed at sunset, eliminating the potential for noise during the sensitive nighttime hours.</p> <p>The Spur Trail (Preferred Alternative) or improvements to Canyon Way (Alternative 2) will result in local direct long term negligible adverse impacts to the soundscape.</p>
<p>Lightscape</p>	<p>The proposed improvements do not include new lighting. No impacts are anticipated.</p>
<p>Geologic Resources & Geohazards</p>	<p>Minimal grading will be required in the parking lot area and orchard to allow for construction of the parking lot, Spur Trail (Preferred Alternative), or improvements to Canyon Way (Alternative 2). Grading in the parking area will have a local direct long term adverse impacts at a negligible level because the soils appear previously graded and the site is relatively flat. It is possible that the hillside adjacent to the parking lot could slide, however no excavation will take place on or into the slope and it appears to be stable (ABAG). Grading and placement of fill at the pedestrian Spur Trail will have a local direct long term minor adverse impact because new soils may be imported to fill the ramp area and existing soils will be compacted to provide a stable surface. The proposed trail is five feet wide with approximately five feet on each side that will be disturbed or altered to ensure a stable trail surface. The area of disturbance at the Spur Trail is an estimated 1800 square feet (15-foot trail corridor by 120-feet of trail). Improvements to Canyon Way (Alternative 2) would occur on an existing paved</p>

Resource Topic /Consultation Requirement	Reason Dismissed
	<p>roadway and include minimal soil movement.</p> <p>The project area is situated between the seismically active Concord fault and the potentially active Franklin Fault and the site is subject to shaking in an earthquake. However, the parking lot and Spur Trail are landscape features that will not expose visitors to additional risk during an earthquake.</p>
<p>Air Quality Clean Air Act (42 U.S.C. §7401 et seq.)</p>	<p>Emissions associated with this project are related to short term construction and long term visitation. Construction activities are expected to result in a local direct short term negligible to minor adverse impacts on air quality due to vehicle emissions and dust generated during construction. Standard Best Management Practices such as covering soil stockpiles will be included in the construction contract.</p> <p>The parking lot and trail are not designed to greatly increase visitation, rather the new parking lot will provide safe visitor parking for those already coming the John Muir NHS and for busses. The parking lot and improvements to John Muir NHS are expected to result in long term direct negligible to minor adverse increases in vehicle emissions.</p>
<p>Prime or Unique Farmlands Farmland Protection Policy Act (7 U.S.C. §4201 et seq.)</p>	<p>John Muir NHS is not included in the definition of Prime or unique farmlands because it is located in an urban area. No impacts are anticipated.</p>
<p>Socioeconomic / Environmental Justice EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 16, 1994</p>	<p>Project construction will provide an increase in employment and spending in the project area, resulting in a direct and indirect short term negligible beneficial impact on the local economy. No other economic or socioeconomic impacts are anticipated.</p>
<p>Aesthetic Resources</p>	<p>Physical changes are expected to result in local direct long term negligible to minor adverse impacts to the appearance and ambience of John Muir NHS. The parking lot on Franklin Canyon Road will alter the existing aesthetics on Franklin Canyon Road; however, it will also reflect the adjacent maintenance area and the Park and</p>

Resource Topic /Consultation Requirement	Reason Dismissed
	<p>Ride parking lot. The Spur Trail will alter the access to the Martinez Adobe and orientation to the unit; however, these improvements are expected to have local minor beneficial impacts to the aesthetic of the Martinez Adobe.</p> <p>Replacing some asphalt walks with a surface that better reflects the ranch scene and is inviting to visitors would have local minor beneficial impacts to aesthetic resources.</p> <p>The proposed improvements, including the proposed parking lot, will not be visible from trails on Mount Wanda.</p>
<p>Hazardous Substances Resource Conservation and Recovery Act (42 U.S.C. § 6901-6993 et seq.)</p>	<p>This project involves the handling of negligible amounts of hazardous substances, including the liquids used to fuel and lubricate the construction equipment. No impacts are anticipated.</p> <p>No hazardous substances will be stored or maintained in the parking area or on the trails. No impacts are anticipated.</p>
<p>Floodplains and Wetlands/ EO 11988 (Amended by EO 12148) , Floodplain Management, May 1977 EO 11990, Protection of Wetlands, May 1977</p>	<p>Construction in the floodplain of Franklin Creek will be negligible and may include the removal of asphalt on an existing trail near the creek and the installation of a different surface, like decomposed granite, to reflect the historic scene. Impacts are expected to be local adverse short term direct and negligible. No work will be conducted in the creek or on the banks.</p> <p>No wetlands will be impacted by the project.</p>
<p>Clean Water Act (33 U.S.C. §1251-1376 et seq.); Oil Pollution Control Act of 1990 (33 U.S.C. §2701 et seq.)</p>	<p>Construction for this project may include a permit from the Regional Water Quality Control Board (RWQCB) under the National Pollution Discharge Elimination System Phase II requirements. The construction contractor may be required to prepared a Storm Water Pollution Prevention Plan and submit it to the RWQCB for approval. Construction could lead to local short term direct negligible to minor adverse impacts to Franklin Creek if releases from the construction site occurred, however, soil movement is minimal and implementation of measures resulting from the permitting process will minimize the potential for construction releases. Measures will likely include no work during the rainy season (November through March), spill prevention materials on-site, and erosion control.</p> <p>Stormwater from the proposed parking lot will drain into Franklin Creek, leading to potential regional indirect</p>

Resource Topic /Consultation Requirement	Reason Dismissed
	<p>long term minor adverse impacts. Untreated storm water can impact water quality due to automobile fluids and metals from brakes and other sources. To reduce the potential for impact, NPS is proposing to implement Best Management Practices for storm water control. The NPS will choose the most appropriate BMP as design proceeds; however a vegetated swale is being considered to slow storm water and filter pollutants. A regular maintenance schedule would be established to clean the vegetated swale. While substantially reducing pollutants to surface water, BMPs are not 100% efficient and some releases will occur having a regional long term negligible to minor adverse impact on the water quality of Franklin Creek.</p>
Land Use	<p>Resolution of the land ownership issue for the small parcel adjacent to Mount Wanda will result in a local negligible long term beneficial impact to the land use. Additionally, the proposed parking lot and Tunnel Trail improvements are consistent with the land use designations identified in the GMP/EA for John Muir NHS.</p>

3.0 Affected Environment

3.1 Consistency with Previous Planning Documents

John Muir NHS was authorized in August 1964, with the passage of Public Law 88-547, that designated the site be "set aside as a public national memorial to John Muir in recognition of his efforts as a conservationist and crusader for national parks and reservations." The eight-plus acre unit originally included the Muir home, the Martinez Adobe, a veterinary clinic, now used as the park headquarters, and several acres of vineyards and orchards.

Approved October 31, 1998, Section 5 of Public Law 100-563 expanded the boundary of the Historic Unit to approximately 340 acres. Included within the added area are two largely undeveloped parcels used for grazing (Mount Wanda), a small tract owned by the City of Martinez, and a small tract containing the gravesite of John Muir. The legislative history indicates that the city-owned tract should be acquired by donation (done) and that the interest acquired in the grave site should be limited to that necessary for its preservation and maintenance by the NPS. The legislation also provides authority for a cooperative agreement covering East Bay Regional Park District maintenance of regional trails on the added lands.

From the establishment of John Muir NHS in 1964 to the present three Master Planning efforts have been completed. The 1965 Master Plan provided an overview of the new park and the existing and potential resources. Specific recommendations regarding structures, furnishings, and landscape were deferred to later studies and plans, however, management and interpretive strategies were developed to convey the historic setting in which Muir lived and wrote. In 1975 and 1976, a Final General Management Plan, Environmental Assessment, and Final Interpretive Prospectus were prepared, reiterating the goal of interpreting the spirit and essence of John Muir through the preservation of the Muir home and related resources and proposing measures to better reflect the appearance of the property during Muir's time.

In 1991, NPS prepared the General Management Plan/Environmental Assessment that updated the parks' objectives and included the acquisition of Mount Wanda and the Muir gravesite. The GMP noted the deficiencies with the Visitor Center parking lot and clearly identified the parking lot proposed in the Preferred Alternative and Alternative 2 for this project. It stated:

- "The existing parking lot is inadequate to accommodate visitors and employees. Bus parking is extremely cumbersome. Parking in the surrounding area is in short supply, with little on-street parking available near the site. It is extremely hazardous for pedestrians to cross the busy Alhambra Avenue. The plan will recommend measures to alleviate the parking problems (pg. 3)."
- "The level portions of the tract adjacent to Franklin Canyon Road would be zoned for development and would be used for various administrative and visitor uses, including an

access and staging facility for Mount Wanda trails and a maintenance facility. Parking here would supplement the existing visitor center parking (pg. 16)."

- "Cars entering the visitor center lot and finding the lot to be filled would be directed to the new parking lot on the City of Martinez property. They would then proceed to the House area via the existing tunnel under State Route #4. A crosswalk and other supplementary road-crossing safety features as needed would be provided on Franklin Canyon Road, and the trail from the tunnel to the unit would be surfaced (GMP page 30)."

In addition, a 1991 Environmental Assessment / Finding of No Significant Impact (FONSI) was prepared that included paving the existing unimproved trail from Mount Wanda to the House Unit. The proposed project included "paving the approximately 195 ft. long by 10 ft. wide tunnel, construction of a 280 ft. by 10 feet wide paved trail over the now unimproved connecting trail, and installation of 285 feet of curb and gutter and 100 feet of sidewalk. The area of the improvements extends from Franklin Canyon Road to the back gate of the Muir House property at the end of Canyon Way. This work was delayed until the design for the parking lot and associated improvements, included as the Preferred Alternative in this EA, could be developed.

3.2 Visitor Safety and Experience

Visitor safety is currently being affected by the physical layout of John Muir NHS. In particular, the Visitor Center parking lot is unsafe and undersized. Visitors coming to John Muir NHS usually arrive via private vehicle or bus and park in the Visitor Center parking lot. The Visitor Center was originally a veterinary clinic and the parking lot off Alhambra Avenue reflects the small scale commercial use. It is a rectangle lot with 17 car spaces, no stalls for busses, and only one entrance/exit. Access and egress is confusing with cars and busses entering and leaving the facility at the same time. It has also led to unsafe situations, specifically when school children exit the bus and congregate in the parking lot waiting for teachers and private vehicles attempt to get into the lot (Figure 9). There have been no reported accidents in the Visitor Center parking lot however, the situation is considered problematic.



Figure 9: Visitor Center Parking Lot: Existing Condition

The Visitor Center parking lot is often full, leading to overflow street parking. Anecdotal evidence suggests that the lot is about half-full on weekdays and overflowing on weekends. The extent of overflow has not been quantified, yet the neighborhood is sensitive to the issue and has requested the NPS provide additional parking to alleviate the situation. During special events at Mount Wanda, visitors park along the edge of Franklin Canyon Road. Without crosswalks or marked spaces, Franklin Canyon Road is a less than secure environment to park. In addition, Caltrans Park and Ride lot does not provide adequate parking for trailhead use at Mount Wanda. The earthen gravel lot is often full on weekends and on weekdays provides parking for commuters. The 1991 GMP anticipated the donation of the land adjacent to Franklin Canyon Road for the construction of a parking lot to alleviate the parking challenges.

In addition to visitor safety, the primary visitor experience at John Muir NHS consists of interpretive tours for individuals and groups. Visitors are presented the opportunity to view a movie about John Muir in the Visitor Center and subsequently follow a self-guided tour of the house and grounds, with stops at the Muir House, Martinez Adobe, and carriage house. Guided tours are also offered to park visitors.

Trail use is an important element of the visitor experience at and around John Muir NHS. The Bay Area Ridge Trail passes adjacent to John Muir NHS and the East Bay Regional Parks District manages two parks within the vicinity including Briones Regional Park located about two miles south and Martinez Shoreline Park located about two miles north. Mount Wanda trails are cooperatively managed by the NPS and the District and the District's Master Plan calls for completion of a trail link between these two parks through the Mount Wanda area.

The Visitor experience is currently adversely affected by the lack of a clear and accessible connection between the House Unit and Mount Wanda. The unimproved Tunnel Trail is uneven, poorly drained, and inaccessible to persons with disabilities. The tunnel itself is poorly lighted and gets muddy in the winter. Additionally, the interpretation of John Muir NHS is adversely affected by the lack of a connection between the House Unit and Mount Wanda. The House Unit and Mount Wanda were both owned by Muir and the closely connected during the period of significance. The two peaks of Mount Wanda are named Helen and Wanda after Muir's daughters. Historically, Muir did not farm or graze the upper slopes of this area, preferring to walk the area and enjoy the views. On a clear day, the Straits of Carquinez are visible to the North, Mount Diablo to the south, and the Sierras can be visible to the east. Muir wrote: "Another lovely day, mostly solid sunshine. Took a fine fragrant walk up the West Hills with Wanda and Helen, who I am glad to see love walking, flowers, trees and every bird and beast and creeping thing. Buttercup, clover, gilia, Brodiaea, Allium, Dodecatheon, larkspur and portulacas are in flower. The oaks are in full leaf. A fine fragrant walk, the babies are delighted."

3.3 Historic Landscape

John Muir NHS is a designated National Historic Landmark (December 29, 1962) and is listed on the National Register of Historic Places (October 16, 1966, updated May 22, 1978). The Muir House is listed on the National Register of Historic Places because of its association to John Muir, a significant figure in the history of American conservation movement. John Muir NHS is important for the interpretation of John Muir and the environmental movement. The unit reflects the organization, productivity, and spirit of John Muir, a fruitful farmer and influential advocate for conservation. The Martinez Adobe, constructed in 1850, is also an important part of John Muir NHS, listed on the National Register of Historic Places as part of the John Muir NHS. The Adobe has California Historic Landmark statue, number 511, and has been documented by the Historic American Building Survey, number CAL-1913.

Currently, NPS is undertaking a Cultural landscape Report (CLR) to document the history and significant of historic landscapes at John Muir NHS, provide guidance for future actions consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties, and provide an outline for expanding the existing National Register documentation. The CLR defines landscape character as the physical qualities of a historic landscape (such as landforms, masses of vegetation, or land uses) and the type and concentration of cultural resources. Landscape characteristics are the general aspects of the landscape that define its historic importance and aid in understanding its historic significance. Landscape features are components of landscape characteristics and represent the smallest unit of study. The CLR identifies landscape features that may be considered contributing or non-contributing to John Muir NHS and those that may be affected by the actions proposed in this EA are discussed below. Figure 10, from the CLR, identifies the existing landscape features at the House Unit.

The analysis conducted for the CLR indicated that the eucalyptus on the lower north slope of Mount Wanda are an element of the historic setting. A planting of eucalyptus trees in the area was

referenced in 1877 diary entry by Mrs. Strentzel (Muir's mother in law). Although the exact location of this planting is not known, it is possible that the eucalyptus trees along Franklin Canyon Road were planted during the period of significance. The trees may have been planted to shade the corrals and barns that were located in this area, as suggested in a photograph c.1901. An aerial photograph from 1939 suggests that the construction of the Arnold Industrial Highway likely took out some of the eucalyptus trees in this area. The photograph suggests some were retained along the banks of the creek north of the road, while a few appear as a conspicuous mass direct across the road to the south. The highway was renamed State Route 4, and when it was upgraded to a full freeway in the 1960s the trees on the north side were removed and the creek diverted into a culvert under the highway.

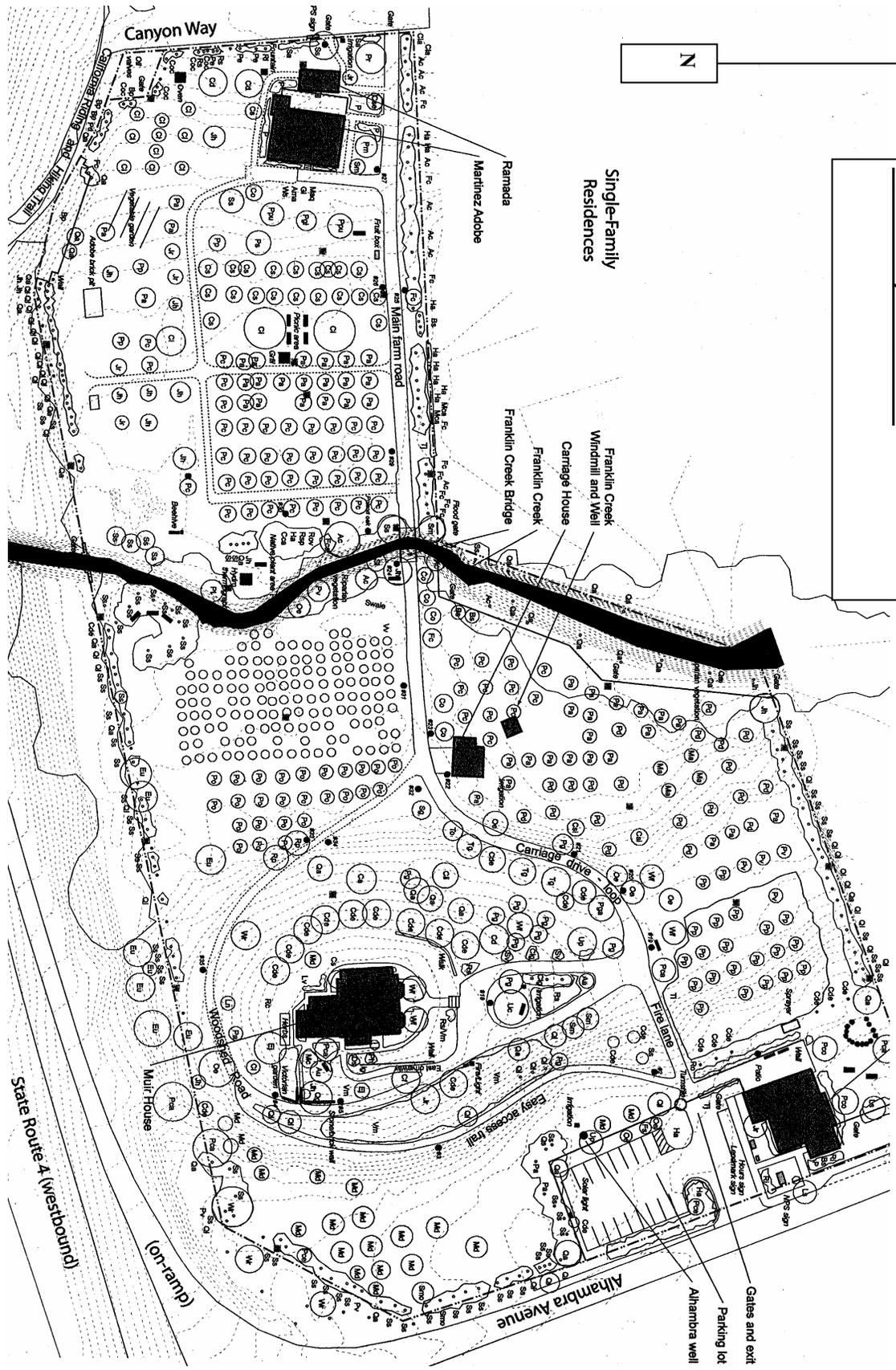


Figure 10: Existing Landscape Conditions, House Unit

Figure 10: Continued

Code	Botanical Name	Common Name(s)
Aa	Agave americana	Century plant
Ac	Aesculus californica	California buckeye
Aj	Aucuba japonica	Variegated gold dust plant
Al	Acacia longifolia	Golden Wattle
Am	Acanthus mollis	Bear's breach
Ama	Arctostaphylos manzanita	Manzanita
Ar	Alcea rosea	Hollyhock
Au	Arbutus unedo	Strawberry tree
Bp	Baccharis pilularis	Dwarf coyote brush
Bs	Buddleia spp.	Butterfly bush
Bs	Buxus spp.	Boxwood
Ca	Cedrus atlantica	Atlas cedar
Cae	Casmanthe aethiopica	Chasmanthe
Cc	Callistemon citrinus	Lemon bottle brush
Cca	Carpenteria californica	Anemone
Cd	Cedrus deodara	Deodar cedar
Cda	Cotoneaster dammeri	Bearberry cotoneaster
Cde	Calocedrus decurrens	Incense cedar
Cf	Cupressus funebris	Mourning cypress
Ci	Carya illinoensis	Pecan
Cj	Camellia japonica	Camellia
Cl	Citrus limon	Lemon
Cl	Crataegus laevigata	English hawthorn
Clg	Chaenomeles lagenaria	Japanese or Flowering
Cl	Cedrus libani	Cedar of Lebanon
Cm	Cupressus macrocarpa	Monterey cypress
Co	Cydonia oblonga	Quince
Coc	Cercis occidentalis	Western redbud
Cr	Campsis radicans	Common trumpet vine
Cs	Citrus sinensis	Orange
Csc	Cytisus scoparius	Scotch broom
Cse	Cornus sericea	American dogwood
Csi	Ceratonia siliqua	Carob
Csp	Cupressus spp.	Cypress
Dd	Dracaena draco	Dragon tree
Ds	Deutzia scabra	Deutzia
Ec	Eschscholzia californica	California poppy
Ej	Eriobotrya japonica	Loquat
Eu	Eucalyptus spp.	Eucalyptus
Fc	Ficus carica	Common fig
Fca	Fremontodendron	Flannel bush
Fs	Feijoa sellowiana	Pineapple guava
Gl	Gaura lindheimeri	Gaura
Ha	Heteromeles arbutifolia	Toyon
Ig	Iris germanica	Bearded iris
Jc	Juniperus conferta	Shore juniper
Jh	Juglans hindsii	California black walnut
Jm	Jasminum mesnyi	Primrose jasmine
Jr	Juglans regia	English walnut
La	Lavendula angustifolia	English lavender
Ln	Laurus nobilis	Sweet bay
Lo	Ligustrum ovalifolium	California privet
Ls	Liquidambar styraciflua	Sweetgum
Lsp	Lampranthus spectabilis	Trailing ice plant
Lv	Ligustrum vulgare	Common privet
Ma	Morus alba	White mulberry
Maq	Mahonia aquifolium	Oregon grape holly
Mc	Myrtus communis	True or Common myrtle
Mca	Myrica californica	Pacific wax myrtle
Md	Malus domestica	Apple
Ng	Nicotiana glauca	Tobacco tree
No	Nerium oleander	Oleander

Code	Botanical Name	Common Name(s)
Oe	Olea europea	Common olive
Oh	Osmanthus heterophyllus	False holly
P	Perennials	Perennials
Pa	Prunus armeniaca	Apricot
Pc	Pyrus communis	Pear
Pca	Phoenix canariensis	Canary Island date palm
Pcc	Pyracantha coccinea	Firethorn
Pce	Prunus cerasifera	Cherry plum
Pco	Pinus coulteri	Coulter pine
Pd	Prunus dulcis	Almond
Pe	Pittosporum eugenioides	Pittosporum
Pg	Punica grantum	Pomegranate
Pga	Prosopis glandulosa	Honey mesquite
Pgl	Picea glauca	White spruce
Ph	Pelargonium hortorum	Common geranium
Pin	Pinus spp.	Pine
Pl	Philadelphus lemoinei	Mockorange
Pl	Prunus lyonii	Catalina cherry
Pm	Pseudotsuga menziesii	Douglas fir
Po	Prunus domestica	European plum
Pp	Prunus persica	Peach
Ppn	Pinus ponderosa	Ponderosa pine
Ppu	Picea pungens	Colorado spruce
Pr	Pinus radiata	Monterey pine
Ps	Picea sitchensis	Sitka spruce
Psa	Prunus salicina	Japanese plum
Pv	Prunus avium	Sweet cherry
Qa	Quercus agrifolia	Coast live oak
Qg	Quercus garryana	Oregon white oak
Ql	Quercus lobata	Valley oak, Cal. white oak
Qs	Quercus suber	Cork oak
Rb	Rosa banksiae	Lady Bank's rose
Rc	Romneya coulteri	Matilija poppy
Rh	Rosa harisonii	Harison's yellow rose
Ri	Rhaphiolepis indica	India hawthorn
Rl	Rosa laevigata	Cherokee rose
Ro	Rosmarinus officinalis	Rosemary
Rov	Rhus ovata	Sugar bush
Rp	Robinia pseudoacacia	Black locust
Rs	Rosa spp.	Rose
Rsp	Ribes speciosum	Fuschia flowering
Sa	Salvia spp.	Sage
Sg	Sequoiadendron	Giant sequoia
Sl	Salix lasiandra	Yellow willow
Sm	Sambucus mexicana	Blue elderberry
Smo	Schinus molle	Pepper tree
Ss	Sequoia sempervirens	Coast redwood
Sv	Syringa vulgaris	Common lilac
Tf	Trachycarpus fortuneii	Windmill palm
Tg	Tamarix gallica	Tamarix
Tl	Trifolium incarnatum	Crimson clover
Tj	Trachelospermum	Star jasmine
To	Thuja occidentalis	American arborvitae
U	Unknown	Unknown
Uc	Umbellularia californica	California bay
Up	Ulmus pumila	Siberian elm
Vm	Vinca major	Periwinkle
Vv	Vitus vinifera	Grape
Wf	Washingtonia filifera	California fan palm
Wr	Washingtonia robusta	Mexican-Washington
Ws	Wisteria sinensis	Chinese wisteria
Za	Zantedeschia aethiopica	Common calla

Although the trees are an element of the historic setting, the CLR was not able to identify individual distinction related to the John Muir National Historic Landmark, due in large part to the separation of the trees from the House Unit by the freeway. These trees would be removed as part of the Preferred Alternative and Alternative 2.



Figure 11: Eucalyptus Trees

The affected environment for this project also includes the main farm road, the Tunnel Trail, and Canyon Way. The main farm road served as the main access from Franklin Canyon Road to the Muir House and likely dates from the construction of the Martinez Adobe (1849). It was paved in the 1980s and although the historic widths and alignments were preserved, the surface material has diminished the integrity of the historic road. As mitigation, the Preferred Alternative and Alternative 2 propose replacement of the asphalt with a more historically appropriate surface. Conversely, the Tunnel Trail is proposed to be paved and it includes the tunnel underneath State

Route 4 and the unimproved segment of the California Riding and Hiking Trail south of the Martinez Adobe. The tunnel was built as part of State Route 4 construction in the 1960s and is not part of the historic landscape. The California Riding and Hiking Trail is not considered part of the historic landscape because it was relocated to its current alignment during the construction of State Route 4 in the 1960s. Canyon Way, proposed for improvements under Alternative 2, was called the Road to Martinez, later renamed Franklin Canyon Road, and was an important route between the town of Martinez and the lands to the west and south. The location of the road may have been a factor in locating the Martinez Adobe in 1849. Franklin Canyon Road was rerouted for the construction of the freeway and currently Canyon Way is a paved cul-de-sac, with residential houses on one side and the park boundary fence on the other. Because of the considerable changes to the setting, Canyon Way is not considered part of the historic landscape.

Beginning in the 1970s, lemon trees were planted south of the Martinez Adobe to reflect the historic orchards. Lemon trees have been planted over time and many have died due to frost or overcrowding. Although the lemon trees were recently planted, the trees are representative of the historic landscape of the west orchard. The Preferred Alternative would include removal of up to three of the lemon trees for the Spur Trail; Alternative 2 does not include the Spur Trail and would not result in the removal of lemon trees.

3.4 Park Operations

Park Operations are affected by the movement of equipment from the maintenance facility to the House Unit. Currently, maintenance staff moves tools, equipment, and materials from the Maintenance Facility to the House Unit via surface streets, including Franklin Canyon Way and Alhambra Avenue. For example, it is difficult for the maintenance staff to drive a lawn mower on Franklin Canyon Road and onto Alhambra Avenue and repeat the process at the end of the day. The repetitious operation is time consumptive, labor intensive, and adds congestion to the neighboring streets.

Park operations are also being affected by the current security environment. Although there are two entry gates along Canyon Way, there is no public entry from the Tunnel Trail to the House Unit. Recent security concerns have reduced the number of entry points to federal facilities and it is unclear whether these restrictions will be lifted in the future. The gates are opened and staffed for special events. The Preferred Alternative includes a Spur Trail that will require intermittent or regular staffing.

Additionally, park operations are affected by a small operating budget. Because of a deficiency in park operations funding, it is unlikely that the John Muir NHS could commit the operation funds to maintain the eucalyptus trees at Mount Wanda. It appears the eucalyptus tree have never been pruned, and it is estimated that a pruning of the largest tree would cost \$10,000 to \$20,000 and the two to three others would cost a similar amount each, totaling between \$40,000 to \$80,000. Follow up pruning would need to occur about once every five years and cost about \$2,000 a tree. The park has a 2004 base budget of \$636,000, most of which is consumed by salaries. The budget environment has an effect on the No Action Alternative.

3.5 Water Smell and Taste at the Maintenance Facility

The NPS constructed a Facility Maintenance facility on Franklin Canyon Road in 1997. The previous well was dug to 45' and the water was considered to have favorable smell and taste. During construction a new well was drilled for the potable water to the facility. To meet regulatory requirements, the well was drilled below 50' and the resulting well water is very hard, staining the plumbing fixtures and releasing a strong odor and taste. The odor is most likely from hydrogen sulfide, although the NPS is reviewing water quality test results to evaluate potential secondary contaminants. Chapter four discusses the impacts of the alternatives to respond to the affected environment.

4.0 Environmental Impacts

4.1 Methodology for Assessing Impacts

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of proposed federal action, reasonable alternatives to that action, and environmental effects that cannot be avoided should the proposed action be implemented. This section analyzes the environmental impacts of project alternatives on Visitor Safety & Experience, Historic Landscape, Park Operations, and Water Smell and Taste at the Facility Management Building. These analyses provide the basis for comparing the effects of the alternatives. NEPA requires consideration of impacts including the context, intensity, duration, type, and measures to mitigate impacts.

Context of Impact

Impacts are considered at their local, regional, or national context as appropriate.

Intensity of Impact

Intensity is a measure of the severity of an impact. The intensity of an impact may be:

- Negligible*, when the impact is localized and not measurable or at the lowest level of detection;
- Minor*, when the impact is localized and slight but detectable;
- Moderate*, when the impact is readily apparent and appreciable; or
- Major*, when the impact is severe and highly noticeable.

Duration of Impact

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts evaluated in this EA may be one of the following:

- Short term* impacts are those that can be reversed relatively quickly. Short term impacts typically occur only during construction and last less than one year; or
- Long term* impacts are those that are reversed more slowly. Long term impacts last one year or longer.

Type of Impact

- Adverse* impacts are those that change the affected environment in a manner tending away from the natural range of variability.
- Beneficial* impacts are those that change the affected environment toward the natural range of variability.
- Direct* impacts include such impacts as animal and plant mortality, damage to cultural resources, or creation of smoke, that occur at the time and place of the action.
- Indirect* impacts are those that occur at a different time and/or place than the action. Indirect impacts include changes such as species composition, structure of the vegetation,

or range of wildlife. Indirect impacts also include impacts that occur off-unit such as erosion-related impacts, or general economic conditions tied to park activities.

- Cumulative* impacts are those impacts on the environment that result from the incremental (i.e., additive) impact of direct and indirect impacts when added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Mitigation of Impacts

- Avoid* conducting management activities in an area of the affected environment.
- Reduce* the type of impact to an affected environment.
- Minimize* the duration or intensity of the impact to an affected environment.
- Repair* localized damage to the affected environment immediately after an adverse impact.
- Rehabilitate* an affected environment with a combination of additional management activities.
- Compensation* of a major long-term adverse direct impact through additional strategies designed to improve an affected environment as much as is practical.

Impairment

In addition to determining the environmental consequences of the preferred and other alternatives, NPS *Management Policies* (NPS, 2001) and Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*, requires analysis of potential effects to determine if actions would impair park resources. The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park resources and values. However, the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact would more likely constitute an impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- Identified as a goal in the Park's *General Management Plan* or other relevant NPS planning documents.

In this EA, impairment is evaluated for historic landscape. The NPS does not make impairment determinations for visitor safety and experience, park operations, or the desirability of potable water.

4.2 Visitor Safety & Experience

Environmental Impacts of the Preferred Alternative

The Preferred Alternative would result in local direct and indirect moderate, long term beneficial impacts to visitor safety because of improvements in parking safety. Busses will park at the proposed parking lot on Franklin Canyon Road, no longer congesting the Visitor Center parking lot, reducing an on-going risk. In addition, the proposed lot will be available for overflow parking, reducing parking impacts to adjacent streets and congestion at the Visitor Center parking lot. Visitors will walk to visit the House Unit along the improved Tunnel Trail.

The Preferred Alternative is expected to result in local direct and indirect moderate long term beneficial impacts to the Visitor Experience because of the trailhead parking allowing improved access to Mount Wanda, improvements to visitor flow at the House Unit, and improved traffic flow and circulation in and around John Muir NHS. The construction of a trailhead will allow visitors improved access to Mount Wanda and the adjacent trail systems, including the Bay Area Ridge Trail and East Bay Regional Parks' trails. Access will be improved for trail users and equestrians. The Spur Trail is considered a local direct minor to moderate long term beneficial impact to the visitor experience because it would provide a direct, pleasant, and accessible trail to Mount Wanda from the Martinez Adobe.

In addition, the proposed Spur Trail and an improved Tunnel Trail may attract more House Site visitors to experience the tranquility of Mount Wanda, above some of the freeway noise and development. Mount Wanda offers panoramic views of John Muir NHS and the surrounding community and an opportunity to imagine Muir reflecting upon his journeys, writings, and conservation challenges. The improvements are expected to result in local indirect moderate long term beneficial impacts to visitor experience.

Cumulative Impacts of Preferred Alternative

Currently, the John Muir Memorial Association is attempting to raise funds to construct a new park visitor center and headquarters building on the site of the existing park headquarters and visitor center. Construction was originally proposed for 1999 or early 2000, yet the project has been delayed and there is no firm schedule. However, during the construction period the existing park parking area will be closed and visitors. The preferred alternative would result in local cumulative moderate short term beneficial impacts to visitor safety and experience by providing visitor parking during the visitor center construction.

Conclusion

Implementation of the Preferred Alternative will have local direct, indirect, and cumulative moderate short and long term beneficial impacts to Visitor Safety and Experience.

Environmental Impacts of Alternative 2

The impacts to Visitor Safety are the similar (local direct and indirect moderate long term beneficial impacts) to the Preferred Alternative. Local direct and indirect minor to moderate long term beneficial impacts to the Visitor Experience would likely occur because of the trailhead parking allowing access to Mount Wanda, minor improvements to visitor flow at the House Unit, and improved traffic flow and circulation in and around John Muir NHS.

Alternative 2 does not include the Spur Trail, but rather includes improvements to Canyon Way, including the installation of a sidewalk and turnaround. The beneficial impact of Alternative 2 is different than the Preferred Alternative (minor instead of moderate) because this route is less of a park experience and involves leaving the park walking along adjacent neighborhood street to reach the Tunnel Trail. The Canyon Way improvements may result in local direct negligible to minor long term adverse impacts to visitors and neighbors due to increased activity (visitors, school groups, and parking) in the neighborhood. However, the improvements could be designed for accessibility and to safely convey visitors from the House Unit to Mount Wanda.

Cumulative Impacts of Alternative 2

Impacts are the same as the Preferred Alternative.

Conclusion

Implementation of the Alternative 2 would have local direct, indirect, and cumulative minor to moderate short and long term beneficial impacts to Visitor Safety and Experience.

Environmental Impacts of No Action Alternative

The No Action Alternative would likely result in local direct and indirect moderate long term adverse impacts to visitor safety in retaining the current parking configuration. Parking would remain a risk in the Visitor Center parking lot and overflow parking would continue in the adjacent neighborhood. Visitor experience and accessibility would sustain local indirect minor long term adverse impacts because of the lack of connection between House Unit and Mount Wanda.

Cumulative Impacts of No the Action Alternative

Currently, the John Muir Memorial Association is attempting to raise funds to construct a new park visitor center and headquarters building on the site of the existing park headquarters and visitor center. Construction was originally proposed for 1999 or early 2000, yet the project has been delayed and there is no firm schedule. However, during the construction period the existing park parking area will be closed and visitors will park elsewhere. The No Action Alternative will likely result in local cumulative minor to moderate short term adverse impacts because parking will not be available during the visitor center construction.

Conclusion

The No Action Alternative would likely result in and local cumulative short and long term minor to moderate adverse impacts to Visitor Safety and Visitor Experience.

4.3 Historic Landscape

Impact Methodology

The assessment of impacts on cultural resources and historic properties was made in accordance with regulations of the Advisory Council on Historic Preservation (36 CFR 800) implementing Section 106 of the National Historic Preservation Act. Following a determination of the areas of potential effect, cultural resources were identified within these areas that are either listed in, or eligible for listing in, the National Register of Historic Places.

An assessment was made of the nature and extent of effects on cultural resources anticipated from implementing proposed undertakings. Cultural resources can be affected by actions that alter the attributes that qualify the resources for inclusion in the National Register. Adverse effects can result when the integrity of a resource's significant characteristics is diminished. Consideration was given both to the effects anticipated at the same time and place of the undertaking, and to those potentially occurring indirectly at a later time and distance.

To provide consistency with requirements of NEPA, the effects are described in terminology intended to convey the context, intensity, duration, and type of potential impacts. Because Historic Landscape is the focus of the impact discussion related to Cultural Resources, the intensity, duration, and type of impacts to the historic landscape are defined below.

Negligible,

- impact(s) is at the lowest levels of detection - barely perceptible and not measurable.

Minor

- Adverse impact - impact(s) would alter a pattern(s) or feature(s) of the historic landscape but would not diminish the overall integrity of the landscape.
- Beneficial impact - preservation of landscape patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic landscapes.-

Moderate

- Adverse impact - impact(s) would alter a pattern(s) or feature(s) of the historic landscape, diminishing the overall integrity of the landscape.
- Beneficial impact - rehabilitation of a landscape or its patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic landscapes.

Major

- Adverse impact - impact(s) would alter a pattern(s) or feature(s) of the historic landscape, diminishing the overall integrity of the resource.

- Beneficial impact - restoration of a landscape or its patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic Landscapes.
- Short-term - Effects on the natural elements of a historic landscape may be comparatively short-term (less than a year) until new vegetation grows or historic plantings are restored.
- Long-term - Because most cultural resources are essentially non-renewable, any effects on archeological, historic, or ethnographic resources would be long-term. Effects on the historic landscape would persist for more than one year.

Environmental Impacts of Preferred Alternative

The Preferred Alternative will not impact the Muir House or the Martinez Adobe directly, however it will impact the historic landscape around the Martinez Adobe. Specifically, the proposed Spur Trail may result in local direct minor long term adverse impacts to the Historic Landscape around the Martinez Adobe. Construction includes removal of up to three lemon trees that, although planted in the 1970s and replanted since, are representative of the historic West Orchard. NPS has taken steps to minimize the impacts, including designing a Spur Trail that will be sensitive to the historic landscape and reduces the removal of lemon trees to the minimal amount, up to three of the lemon trees. The Spur Trail will gracefully enter the property following the contour of the landscape as much as possible, using the minimal amount of imported fill. The Spur Trail is considered the addition of a new compatible element to a cultural landscape, designed in accordance to the Secretary of the Interior's Standard's for the Treatment of Historic Properties, Guidelines for the Treatment of Cultural Landscapes, including:

- "Additions, alterations, or related new construction do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. New work is differentiated from the old and is compatible with the historic materials, features, size, scale and proportion, and massing of the landscape.
- Additions and adjacent or related new construction are undertaken in such a manner that if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired."

The Spur Trail would have an effect upon the cultural landscape, however, it would not be an adverse effect under NHPA. To reduce potential effects, NPS proposes:

Mitigation HL1 In coordination with NPS Historic Landscape Architects, the Spur Trail will be designed to be a new compatible element to a cultural landscape, in accordance to the Secretary of the Interior's Standard's, including replanting up to six lemon trees if appropriate.

Responsibility: NPS Project Manager, included as part of the project.

Mitigation HL2 In coordination with NPS Historic Landscape Architects, NPS will work toward replacing the asphalt surfaces on the gently sloping segments of the main farm road with a material that is consistent with the historic landscape. Responsibility: NPS Superintendent, on-going work using multiple funding sources.

Additionally, direct minor long term adverse impacts may occur from the removal of up to four large eucalyptus trees at the proposed parking lot at Mount Wanda. The removal of the trees is considered a local direct minor long term adverse impact because it would alter a feature of the historic landscape but would not diminish the overall integrity of the landscape. The possibility that John Muir himself may have planted these trees was considered in the planning process. However, as a solitary feature, the trees do not have individual distinction related to the National Historic Landmark, due in large part to the separation from the House Unit by the freeway. The connection of the trees to the life of John Muir has been irrevocably separated.

Mitigation HL#3: Interpretive panels will be developed and installed in an appropriate place adjacent to the parking lot, with themes that may include John Muir, the significance of Mount Wanda, the history of agriculture in the Alhambra Valley, a bulletin board, and hiking information. Responsibility: NPS Interpretive Staff included as part of the project or as funding becomes available.

Cumulative Impacts of Preferred Alternative

Past actions and urban development have had local cumulative long term adverse impacts on the historic landscape of John Muir NHS. In particular, the displacement of agriculture in the Alhambra Valley, State Route 4, the changes and neglect to the structures brought on after Muir, and the changes made by the NPS to restore the facilities and accommodate visitor use have cumulatively exacted a toll on the historic landscape. The NPS is proposing to design this project to not add to those effects. However, if not designed or implemented appropriately the project has the potential to add local cumulative minor long term adverse impacts to an impacted site.

Conclusion

In terms of the NHPA, the Preferred Alternative will likely have an effect, although not an adverse effect, upon a National Historic Landmark. The Preferred Alternative includes the removal of eucalyptus trees that may have been planted in the period of significance. However, the trees are considered a solitary feature without individual distinction related to John Muir NHS, irrevocably separated from the history of the site by a freeway, frontage road, and suburban development. The Spur Trail will be designed in accordance to the Secretary of the Interior's Standard's for the Treatment of Historic Properties, Guidelines for the Treatment of Cultural Landscapes and is considered the addition of a new compatible element to a cultural landscape.

In terms of NEPA, the Preferred Alternative could result in local direct and cumulative long term, adverse impacts to the historic landscape because of the removal of the eucalyptus trees for the parking lot and construction of the Spur Trail at the House Unit. The Preferred Alternative will not diminish the integrity of the resource nor result in impairment to the historic landscape.

Environmental Impacts of Alternative 2

The environmental impacts of Alternative 2 are similar to the Preferred Alternative with the exception of the Spur Trail and improvements to Canyon Way. Alternative 2 would avoid the potential local direct minor long term adverse impacts associated with removal of the lemon trees and construction of the Spur Trail. Construction of improvements to Canyon Way would have local long term negligible impacts the historic landscape, because Canyon Way is a paved residential cul-de-sac that no longer retains historic features.

Cumulative Impacts of Alternative 2

The cumulative impacts of Alternative 2 are similar to the Preferred Alternative with the exception of the Spur Trail. Cumulative impacts would be less than the Preferred Alternative because the local cumulative minor long term adverse impact of constructing the Spur trail would be avoided.

Conclusion

In terms of NHPA, Alternative 2 will likely have an effect, although not an adverse effect, upon a National Historic Landmark. Alternative 2 includes the removal of eucalyptus trees that may have been planted in the period of significance. However, the trees are considered a solitary feature without individual distinction related to John Muir NHS, irrevocably separated from the history of the site by a freeway, frontage road, and suburban development.

In terms of NEPA, Alternative 2 could result in a local direct and cumulative minor, long term, adverse impact to the historic landscape because of the removal of the eucalyptus trees for the parking lot. Alternative 2 does not include the Spur Trail, resulting in reduced potential adverse impacts compared to the Preferred Alternative.

Environmental Impacts of No Action Alternative

Comparably, the No Action Alternative may avoid the impacts described under the Preferred Alternative and Alternative 2. However, local indirect minor long term adverse impacts to the historic landscape could occur through neglect. It appears the eucalyptus trees can live up to 300 years, the Mount Wanda trees are likely half that age, and appear to be healthy. It is possible that neglect could result in impacts to these trees. As described in the Park Operations section, the NPS has a base budget that cannot support the cost of pruning and managing the eucalyptus trees at Mount Wanda.

Cumulative Impacts of No Action Alternative

The cumulative impacts of neglect could result in local cumulative minor long term adverse impacts to the historic landscape.

Conclusion

In terms of NHPA, benign neglect could result in an effect, although not an adverse effect, upon a property listed on the National Register of Historic Places. Lack of funding for maintenance of the eucalyptus trees may result in the eventual loss of the trees.

In terms of NEPA, the No Action Alternative may result in local indirect and cumulative long term minor adverse impacts to the Historic Landscape. The No Action Alternative would not diminish the integrity of the resource nor result in impairment to the historic landscape.

4.4 Park Operations

Impacts of the Preferred Alternative

The Preferred alternative will result in direct local minor to moderate long term beneficial impacts to park maintenance operations. Maintenance staff will use the Tunnel Trail to transport small equipment and materials from the facility maintenance facility to the House Unit. In order to avoid potential conflicts with visitors using the Tunnel Trail the following mitigations will be implemented:

Mitigation Park Operations (PO) #1: During normal operations, maintenance Vehicles will be moved early in the day and late in the day to avoid the busiest times.

Responsibility: NPS Maintenance Division

Mitigation PO#2: While NPS employees transition to using the tunnel, two employees will be present when moving maintenance equipment through the tunnel. New NPS employees will be trained to safely move equipment through the tunnel.

Responsibility: NPS Maintenance Division

Mitigation PO#3 Large maintenance equipment, like a tractor, will not be allowed on the Spur Trail, but would continue to Canyon Way, turn right and enter the House Unit through the vehicle gate. Smaller equipment, like a hand push mower, could use the Spur Trail.

Responsibility: NPS Maintenance Division

The Preferred Alternative will also result in local indirect minor long term adverse impacts to park operations. Park staff will be required to collect the garbage, pick up the recycling, and open and close the gate at the proposed Mount Wanda parking lot. Because the site is adjacent to the maintenance facility, this duty will be easier and result in local direct minor long term adverse impacts to park operations

Although the Spur Trail will not regularly be used by park maintenance staff, the gate will be staffed during special events or times of high visitation. Because of security concerns the gate cannot be left open. Staff will open and close the gate to allow school children and their docents to meet the busses at the proposed Mount Wanda parking lot. It is probable that the operation of the gate will not require additional staff, however a plan will need to be developed for use of the gate, potentially including an electronic lock that can be operated from the Visitor Center. The additional burden on staff will result in a local indirect minor long term adverse impact to park operations.

Cumulative Impacts

The additional staff duties as a result of the Preferred Alternative along with potential increase in staff needs resulting from a new visitor center could strain staff resources. It may be necessary to request additional staff when the visitor center is rebuilt. Conversely, it could be argued that a new visitor center would require less maintenance than the existing visitor center. In balance, it appears that local cumulative minor long term adverse impacts could occur as a result implementation of the Preferred Alternative along with the construction of a new visitor center.

Conclusion

Allowing maintenance staff to use the Tunnel Trail to transport small equipment and materials would result in a local direct minor to moderate long term beneficial impact to park operations. The Preferred Alternative would also result in local indirect and cumulative minor long term adverse impact to park operations related to the staffing requirements for maintaining the proposed parking lot, intermittent staffing the gate at the Spur Trail, and staffing a new visitor center.

Impacts of Alternative 2

Alternative 2 would result in similar impacts to park operations as the Preferred Alternative with the exception of staffing requirements to maintain the gate at the Spur Trail. Staffing would not be required to open and close the gate or monitor during special events.

Cumulative Impacts of Alternative 2

Alternative 2 would result in similar cumulative impacts to park operations as the Preferred Alternative with the exception of managing the gate at the Spur Trail.

Conclusion

Allowing maintenance staff to use the Tunnel Trail to transport small equipment and materials would result in a local direct minor to moderate long term beneficial impact to park operations. Alternative 2 would also result in local indirect and cumulative minor long term adverse impact to park operations related to the staffing requirements for maintaining the proposed parking lot and staffing of a new visitor center.

Impacts of the No Action Alternative

The No Action Alternative would result in the status quo related to park operations and maintenance. Local direct minor long term adverse impacts would continue because of the extra time, resources, and risk assumed to transport equipment and materials from the Maintenance Facility to the House Unit.

Cumulative Impacts of the No Action Alternative

No cumulative impacts to park operations are anticipated from the No Action Alternative.

Conclusion

The No Action Alternative will lead to local direct minor long term adverse impacts to park operations because of the time and resources spent transporting equipment from the Maintenance area to the House unit.

4.5 Water Smell and Taste at the Maintenance facility

Impacts of the No Action Alternative (Preferred)

The No Action Alternative would result in local direct minor long term adverse impacts to the maintenance staff at John Muir NHS. The water at the Facility Maintenance facility would continue to be of poor taste and smell and would continue to stain the conveniences. Maintenance staff would continue to avoid using it for drinking and not use the shower installed in the facility. However, although the water is not desirable, it does not appear to be a risk to health and safety and staff could continue to use the water for facility activities.

Cumulative Impacts of the No Action Alternative

No cumulative impacts are foreseen.

Conclusion

The No Action Alternative is preferred, resulting in local direct minor long term adverse impacts to the maintenance staff from the continued poor smell and taste of the water and staining of the plumbing fixtures.

Impacts of Alternative 2

Alternative 2 could include three options to improve the taste and smell of the water. Each is presented below with the potential environmental impacts. If an option is selected, it will be presented in the FONSI for this project.

1. Resume using 45-foot well that was abandoned when the new Facility Maintenance facility came on line.

Anecdotal evidence suggests that the water from this well was superior in clarity and taste. The old well could be rehabilitated and it is likely the smell and taste would be the same as the previous level. However, this well meets the definition of surface water well and falls under the surface water treatment regulations of the Environmental Protection Agency, requiring the NPS to install a small water treatment system. A small treatment system may require the construction of a small shed near the Facility Maintenance facility to house the machinery.

A small water treatment plant also requires the disposal of brine (about 10 to 20% of volume treated). It may be possible to use the leach field for the disposal, likely requiring additional permitting and monitoring to ensure that there is adequate separation between the disposal and groundwater. Option 1 would likely result in local direct negligible short term adverse impacts from well rehabilitation, construction of a small treatment facility, and possible local direct negligible long term adverse impacts from brine disposal. In addition, Option 1 would likely lead to local direct minor to moderate long term beneficial impacts to the desirability of the water at the Maintenance Facility.

2. Treat the water that is being produced from the existing well.

Installation of a small water treatment facility would be required treat the smell and taste of the water currently being produced. Similar to the option above, this may require construction of a small shed to house the treatment machinery and require brine disposal. Option 2 would likely result in local direct negligible short term adverse impacts from construction of a small treatment facility and possible local direct negligible long term adverse impacts from brine disposal. In addition, Option 2 would likely lead to local direct minor to moderate long term beneficial impacts to the desirability of the water at the Maintenance Facility.

3. Extend a water line through the Tunnel Trail and trench the water line from the end of the tunnel across Franklin Canyon Road to the Facility Maintenance building. The water line extension would require a tapping permit from the water utility.

This option was initially considered for the Facility Maintenance facility, but was not selected because of consideration of the size of the line. The NPS proposed a 2" line to meet the needs of the Facility Maintenance facility. However, it is likely that the water utility would require installation of a 6" line to allow further extension of water service along Franklin Canyon Road. In addition, it is likely that a 6" line would be required to meet fire safety requirements at the Facility Maintenance facility. Extending a 6" line to Franklin Canyon Road has potential indirect long term beneficial and/or adverse impacts related to residential development. Because it is a City water line, water would be available for residents and potential future connections along Franklin Canyon Road. NPS is reluctant to enter into an agreement that has unknown impacts upon future development of the Franklin Canyon area and would likely be required to perform additional analysis for this option. Construction may include local direct minor short term adverse impacts related to traffic, noise, archeology, and air. In addition, Option 3 would likely lead to local direct minor to moderate long term beneficial impacts to the desirability of the water at the Maintenance Facility.

Cumulative Impacts of Alternative 2

No cumulative impacts are foreseen.

Conclusion

Alternative 2 will lead to local direct negligible to minor short term adverse impacts from construction and operation of options one, two, or three. In addition, each option would likely lead to local direct minor to moderate long term beneficial impacts to the desirability of the water at the Maintenance Facility. Option three may have potential indirect long term beneficial and/or adverse impacts of unknown magnitude.

5.0 Consultation and Coordination

A scoping letter initiated public scoping for the project on January 14, 2004. The letter was mailed to the 19 agencies and organizations listed in the table below and to the park mailing list that includes 131 residents in the surrounding community. It does not appear articles were printed in the newspapers contacted about this project. The scoping letter solicited comments from interested agencies, organizations, and individuals for assistance in identifying potential issues and impact topics for the proposed undertaking. No comments were received.

In addition, individual letters were sent to consulting agencies, including the State Historic Preservation Officer (SHPO) and the U.S. Fish and Wildlife Service (USFWS). The SHPO letter was sent February 23, 2004 and it discussed the required consultation under Section 106 of the National Historic Preservation Act and stated the potential for the project to affect the National Historic Site. No response was received. A letter was sent with this EA asking the SHPO to concur with the findings of an effect, but not an adverse effect upon a property listed on the National Register of Historic Places. Results of the consultation will be included in the decision document. The USFWS letter was sent February 19, 2004, informing the agency of the project and requesting a list of federally threatened or endangered species in compliance with Section 7 of the Endangered Species Act. A letter and species list was received on March 15, 2004. NPS Natural Resources staff reviewed the letter and list of species and indicated that no federally threatened or endangered species are present at John Muir NHS. A letter was sent with this EA that includes NPS biologist's findings that this project will have no effect upon sensitive species. Informal consultation with the USFWS is considered complete and no further consultation is anticipated.

About 131 local residents and interested individuals were sent notice of the EA through the mail and the agencies and organizations identified below were sent a copy of the EA. The EA is available at the Visitor Center, will be sent to local libraries, and is posted on the web at:

<http://www.nps.gov/jomu/pphtml/news.html>

Table 4: Agencies and Organizations Sent an EA

(About 131 local residents and interested individuals also sent an EA)

US Fish and Wildlife Service Pacific Regional Office 2800 Cottage Way Sacramento CA 95825	Federal Highway Administration Department of Planning 650 Capitol Mall, Suite 4-100 Sacramento, CA 95814
Milford Wayne Donaldson California State Preservation Officer Office of Historic Preservation Department of Parks and Recreation P.O. Box 942896 Sacramento, CA 94296-0001	California Department of Transportation District 4 Offices 111 Grand Avenue Oakland, CA 94612
California State Clearinghouse P.O. Box 3044	Contra Costa County Community Development

Sacramento, CA 95812-3044	651 Pine Street, 4th Floor - North Wing Martinez, CA 94553
City of Martinez Division of Planning 525 Henrietta Street Martinez, CA 94553	Bay Area Ridge Trail Council 1007 General Kennedy Avenue - Suite 3 San Francisco, California 94129
San Francisco Bay Trail ABAG 101 8 th Street Oakland, CA 94607	Greenbelt Alliance 1601 North Main Street, Suite 105 Walnut Creek, CA 94596
Muir Heritage Land Trust P. O. Box 2452 Martinez, CA 94553	Sierra Club San Francisco Chapter 2530 San Pablo Avenue Berkeley, CA 94702
Sierra Club Mount Diablo Group P.O. Box 4457 Walnut Creek, CA 94596	Gabriel Jay President, John Muir Memorial Association 756 Country Club Drive Moraga, CA 94556
Corey Lyons Contra Costa Times 2640 Shadelands Drive Walnut Creek, CA, 94598	Editor Martinez News-Gazette 615 Estudillo Street Martinez, CA 94553
Advisory Council on Historic Preservation 1100 Pennsylvania Avenue NW, Suite 809 Old Post Office Building Washington, DC 20004	East Bay Regional Park District Department of Planning 2950 Peralta Oaks Court P.O. Box 5381 Oakland, CA 94605
Congressman George Miller 3220 Blume Drive, Suite 281 Richmond, CA 94806	

6.0 References

Association of Bay Area Governments (ABAG); 2003b; Earthquake Shaking (Intensity) Hazard Maps for different fault source scenarios*; (based on Perkins, J., et. al.; 1997, updated 2003; "On Shaky Ground" report); available at interactive mapping Internet site:
<http://www.abag.ca.gov/bayarea/eqmaps/pickcity.html>

Environmental Protection Agency (EPA), October 2003. Historical and Current Status of Steelhead (*Oncorhynchus mykiss*), Coho Salmon (*O. tshawytscha*) in Streams of the San Francisco Estuary, California. Robert Leidy, Gordon Becker, and Brett Harvey.

Fellers, April 2004. 2003 Progress Report: Acoustic Inventory and Monitoring of Bats at National Parks in the San Francisco Bay Area Prepared by Gary Fellers Western Ecological Research Center, USGS

Jepson & Murdock, fall 2002. Inventory of Native and Non-Native Vegetation on John Muir National Historic Site, Eugene O'Neill National Historic Site, and Port Chicago National Monument. Prepared by Eric Jepsen & Andrew Murdock

NPS, November 1987. Natural and Cultural Resources Management Planning Overview. Prepared by the National Park Service

NPS, February 1991. General Management Plan and Environmental Assessment. Prepared by the National Park Service

NPS, December 1991. Environmental Assessment and Finding of No Significant Impact (FONSI) for Trail to Mount Wanda Area. Prepared by the National Park Service

NPS, April 1993 Revision. Resources Management Plan: John Muir National Historic Site. Prepared by the National Park Service

NPS, June 1998, NPS-28: Cultural Resource Management Guideline, Secretary of the Interior's Standard's for the Treatment of Historic Properties, Guidelines for the Treatment of Cultural Landscapes.

NPS, January 2001. Director's Order 12. Conservation planning, environmental impact analysis, and decision making. Prepared by the National Park Service

NPS, May 2003. Historic landscape Report for John Muir National Historic Unit: 75% Review Draft: Unit History. Prepared by the Olmstead Center for Landscape Preservation

NPS, January 2004. Personal Communications between Susan O'Neill (biologist, NPS) & Jonathan Gervais (Environmental Protection Specialist, NPS).

NPS, March 2004. Historic landscape Report for John Muir National Historic Site: 95% Review Draft: Site History, 75% Review Draft: Existing Conditions and Analysis. Prepared by the Olmstead Center for Landscape Preservation