

Environmental Assessment (EA)

**Kehoe Dairy Freestall Barn Additions
and New Manure Holding Pond**

Point Reyes National Seashore, Marin County

Point Reyes National Seashore

National Park Service

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Abstract

This is an Environmental Assessment (EA) for the Kehoe Dairy Freestall Barn Additions and New Manure Holding Pond at Point Reyes National Seashore (PRNS). The purpose and need of the project is to: 1) expand the existing freestall barn to house additional cows in order to avoid degradation of the year-round pasture area by unsheltered cows in winter months, and also to improve overall dairy cow health and milk production; and 2) improve manure management in order to reduce risk of water quality impacts (sediment and nutrients from animal waste) to Kehoe Creek, and thereby also to improve the quality of aquatic habitat. The project features include construction of an addition to the freestall barn, a new freestanding calf barn east of the freestall barn, a new storage building, and a new manure holding pond. Other project features include improvements to the dairy's stormwater management system, and restoration and revegetation of the year-round pasture area.

The EA evaluates two alternatives, which include no action and the preferred action. Additional alternatives were not evaluated due to the severe topographic and physical limitations of the site, and because of operational considerations. Since no other feasible project alternatives are available, evaluation of additional alternatives is not warranted. The following potential impact topics are analyzed: natural resources, including vegetation, water resources, soils, topography, air quality, special-status species, and wildlife; cultural resources; visual quality; noise; public health and safety; and public services and utilities.

Alternative 2 (preferred action) has important site-specific benefits to the water quality and aquatic habitats in Kehoe Creek, and is also beneficial to the local economy. Alternative 2 would have minimal or no impact on vegetation, air quality, soils, topography, cultural resources, visual quality, human health and safety, noise, and public facilities and services. While Alternative 2 would result in potential impacts to special-status wildlife species, these impacts can be fully mitigated by incorporated measures.

Although these potential impacts associated with Alternative 2 would be avoided altogether under Alternative 1 (no action), water quality impacts to Kehoe Creek, and consequent impacts to aquatic habitats, would continue unabated under Alternative 1. For these reasons, Alternative 1 is not preferred from an environmental perspective. Alternative 2 is the preferred alternative because it results in important benefits to water quality and aquatic wildlife habitat while having otherwise minimal or readily mitigable impacts.

The project requires consultation with the U.S. Fish and Wildlife Service for potential impacts to critical habitat for California red-legged frog. The new manure pond would be constructed near an ephemeral stream and would encroach upon the 300-foot stream setback zone protected by the Fish and Wildlife Service for upland movement and dispersal of the red-legged frog. No other consultations with federal or state agencies are contemplated. Marin County will review grading and drainage plans.

Table of Contents

1. Purpose and Need/Introduction	1
2. Alternatives, including the Proposed Action	7
3. Affected Environment.....	13
4. Environmental Consequences	19
5. Summary of Impacts and Incorporated Measures	46
6. Consultation and Coordination	49
7. Preparers	50
8. References.....	51

List of Tables

Table 1: Comparison of Alternatives.....	44
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List of Appendices

[Appendix A](#): Project Location Map

[Appendix B](#): Project Site Plans and Profiles

[Appendix C](#): Engineering Report (Grading Permit Application)

[Appendix D](#): Biological Survey Report

Appendix E: Other Projects Considered in the Cumulative Analysis

Appendix F: Glossary of Terms

1. Purpose and Need/Introduction

1.1 Overview

This Environmental Assessment (EA) has been prepared to assist the National Park Service (NPS) with planning and decision making and to determine whether an Environmental Impact Statement (EIS) is required for the proposed additions to the freestall barn and the construction of a new manure holding pond at the J Ranch (Kehoe Dairy), Point Reyes National Seashore (PRNS).

The purpose and need of the project is as follows:

- Expand the existing freestall barn to house additional cows in order to avoid degradation of year-round pasture area, and also to improve overall dairy cow health and milk production.
- Improve manure management in order to reduce risk of water quality impacts (sediment and nutrients from animal waste) to Kehoe Creek.

To fulfill the project purpose and need, Kehoe Dairy proposes to construct a free-standing addition to the west side of the existing freestall barn. In addition, an enclosed calf area will be constructed adjacent to the east side of the barn. The freestall addition will accommodate 150 or more additional cows under shelter, which will avoid the necessity of keeping unsheltered cows in the pasture area west of Pierce Point Road during winter months. This will improve manure management by minimizing the number of cows depositing waste in the pasture area under wet conditions, thus avoiding the consequent entrainment of nutrients in stormwater runoff discharged to Kehoe Creek. Revegetation and stabilization of this pasture is also proposed in order to reduce soil erosion and transport of sediment to Kehoe Creek.

In order to accommodate the increased generation of animal waste under shelter, an additional manure holding pond is proposed to be constructed on the property. This pond will be sized such that the total storage capacity of the dairy's manure holding ponds will accommodate 100 percent of the manured water generated, as well as stormwater runoff, with no overflow. In addition, the efficiency of the manure management system will be increased by providing further separation of the manured water collection system from the clean stormwater drainage system at the dairy complex. This will reduce flows of clean stormwater into the manure holding ponds, thus effectively increasing the capacity of the ponds to hold wastewater.

1.2 Environmental Compliance

As a federal facility, the Point Reyes National Seashore is subject to the provisions of the National Environmental Policy Act (NEPA), the basic national charter for environmental protection. NEPA requires an interdisciplinary study of the impacts associated with federal actions. For the PRNS, these requirements were initially met with the preparation of the *PRNS/Golden Gate National Recreation Area Management Plan and Environmental Analysis*

(NPS 1980). Because the proposed project involves new construction, an EA has been prepared to address site-specific impacts to determine whether further environmental review is necessary.

The following regulations are also applicable to the project:

Americans with Disabilities Act, PL 101-336, 104 Stat. 327, 42 USC §12101. This act states that all new construction and programs will be accessible to individuals with disabilities. Additionally, National Park Service Special Directive 83-3 states that accessibility will be proportional to the degree of development (i.e., areas of intense development such as visitor centers, museums, drive-in campgrounds, etc., will be entirely accessible, and areas of lesser development such as backcountry trails and walk-in campgrounds may have fewer accessibility features). The project would be constructed in conformance with this act.

Architectural Barriers Act of 1968, PL 90-480, 82 Stat. 178, 42 USC §1451 et seq. This act establishes standards for design/construction or alteration of buildings to ensure that physically disabled persons have ready access to and use of such buildings. The act excludes historic structures from the standards until they are altered. The project would be constructed in conformance with this act.

Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)(40 CFR 1500-1508). The Council on Environmental Quality (CEQ) regulations for implementing NEPA establish the procedures by which federal agencies fulfill their obligations under the NEPA process. The CEQ regulations ascertain the requirements for environmental assessments and environmental impact statements that document that NEPA process. The CEQ regulations also define such key terms as “cumulative impact,” “mitigation” and “significantly” to ensure consistent application of these terms in environmental documents. This environmental analysis was prepared as directed in the CEQ regulations.

National Environmental Policy Act (NEPA) of 1970, PL 91-190, 83 Stat. 852, 42 USC §4341 et seq. The NEPA process is intended to help public officials make decisions that are based on an understanding of environmental consequences and to take actions that project, restore, and enhance the environment. Regulations implementing NEPA are set forth by the Council on Environmental Quality. The NEPA process guides the overall planning for this project.

Natural Resources Legislation

Clean Air Act, as amended, PL Chapter 360, 69 Stat. 322, 42 USC §7401 et seq. Section 118 of the Clean Air Act requires all federal facilities to comply with existing federal, state, and local air pollution control laws and regulations. This project would be consistent with this act.

Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) of 1977, 33 USC §1251 et seq. The Clean Water Act provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation’s waters. Section 404 of the Act prohibits the discharge of fill material into navigable waters of the United States, including

wetlands, except as permitted under separate regulations by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. This project does not involve filling of wetlands and therefore would be consistent with this act.

Clean Water Act Amendments of 1987. The 1987 amendments to the Act required that the Environmental Protection Agency establish regulations for the issuance of municipal and industrial stormwater discharge permits as part of the National Pollutant Discharge Elimination System (NPDES). The final Environmental Protection Agency regulations were published in November 1990. These regulations apply to any construction activities that disturb more than five acres of land. This project would result in the disturbance of less than five acres and therefore would not be subject to the NPDES regulations on stormwater discharges related to construction activity. However, Best Management Practices (BMPs) for erosion control will be implemented during project construction.

Endangered Species Act of 1973, as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq. The Endangered Species Act protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service (USFWS), from unauthorized take, and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Section 7 of the Act defines federal agency responsibilities for consultation with the U.S. Fish and Wildlife Service and requires preparation of a Biological Assessment to identify any threatened or endangered species that is likely to be affected by the proposed action. The National Park Service initiated and maintains informal consultation with the U.S. Fish and Wildlife Service. See Appendix D for correspondence with the USFWS and a copy of the biological evaluation prepared for this project.

Cultural Resources Legislation

Archaeological Resources Protection Act of 1979, PL 96-95, 93 Stat. 172, 16 USC §470aa et seq., and 43 CFR 7, subparts A and B, 36 CFR. This act secures the protection of archaeological resources on public or Indian lands and fosters increased cooperation and exchange of information between private, government, and professional communities in order to facilitate the enforcement and education of present and future generations. It regulates excavation and collection on public and Indian lands. It requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing a permit. The act was amended in 1988 to require the development of plans for surveying public lands for archaeological resources and systems for reporting incidents of reported violations. Since there are no known archaeological resources in the project vicinity, the project is consistent with this act.

National Historic Preservation Act of 1966, as amended, PL 89-665, 80 Stat. 915, 16 USC §470 et seq., and 36 CFR 18, 60, 61, 68, 79, 800. The National Historic Preservation Act requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementation regulations (36 CFR 800) which allow agencies to develop agreements for consideration of these historic properties. A letter to the State Historic

Preservation Officer, who has authority for administering the Act in California, is contained in Appendix E.

Executive Orders

Executive Order 11593: Protection and Enhancement of the Cultural Environment. This Executive Order instructs all federal agencies to support the preservation of cultural properties. It directs them to identify and nominate cultural properties under their jurisdiction to the National Register of Historic Places and to “exercise caution...to assure that any federally-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered.” This project is consistent with this Executive Order.

Executive Order 11988: Floodplain Management. This Executive Order (EO) requires federal agencies to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of floodplains, and to avoid development in floodplains whenever there is a practical alternative. If a proposed action is found to be in an applicable regulatory floodplain, the agency shall prepare a floodplain assessment, known as a Statement of Findings. Since there are no floodplain areas within the project site, a Statement of Findings is not required for this project.

Executive Order 11593: Protection of Wetlands. This EO established the protection of wetlands and riparian systems as the official policy of the federal government. It requires all federal agencies to consider wetland protection as an important part of their policies and to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Should adverse impacts on wetlands be identified, a Wetland Statement of Findings must be prepared and included in subsequent compliance (such as an Environmental Assessment or Environmental Impact Statement) for the specific project. For this project, no wetlands will be adversely affected, so no Wetland Statement of Findings is required.

Executive Order 11593: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This Executive Order requires all federal agencies to incorporate environmental justice into their mission statements by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project is consistent with this Executive Order.

Executive Order 12902: Energy Efficiency and Water Conservation. This EO directs each agency involved in the construction of a new facility to design and construct it to use energy efficiently, conserve water, and employ renewable energy technologies. The requirements for this Executive Order would be met during the design phase of the project.

Executive Order 13112: Invasive Species. This Executive Order prevents the introduction of invasive species and directs federal agencies to not authorize, fund, or carry out actions that they

believe are likely to cause or promote the introduction or spread of invasive species. This project is consistent with this Executive Order.

Coastal Zone Management Act. The purpose of this act is to protect coastal environments. While the act transfers regulatory authority to the states and excludes federal installations from the definition of the “coastal zone,” it requires that federal actions be consistent with the state coastal management plans developed under the Act. Activities taking place within the coastal zone under the definition established by the California Coastal Management Plan require a federal consistency determination. The project will be reviewed for consistency with the coastal plan.

1.3 Relationship to Other Plans and Projects

In the *General Management Plan (GMP), Point Reyes National Seashore* (NPS 1980), the Kehoe Dairy is located within a Special Use Zone (Pastoral Land). This subzone was established to permit the continued use of existing ranchlands for ranching and dairying. These are lands upon which activities are permitted other than preservation and visitor use. One of the natural resources management objectives in the GMP is to monitor grazing and improve range management practices in the pastoral zone in cooperation with the ranchers and the Natural Resources Conservation Service.

The *Statement for Management for Point Reyes National Seashore* (NPS 1993) discusses dairy and beef cattle operations. Management concerns listed in the Statement for Management include grazing standards, pollution control, stock dams, loafing barns, and silage pits, among other things.

The overall goal of the *Range Management Guidelines, Point Reyes National Seashore* (NPS 1993) is to administer the grazed rangelands in PRNS and the Northern District of Golden Gate National Recreation Area in a manner that will provide environmental protection and restoration to those lands, make available public recreational opportunities, and maintain a visually aesthetic pastoral scene while simultaneously permitting ranchers to continue their traditional and viable agricultural operations. Specific resource goals include protection of waterbodies from fecal and chemical contamination, minimizing soil erosion associated with ranching activities to prevent soil loss and to protect surface water from increased sediment loads, and protection of significant natural resources in the pastoral zone with special attention to streams, stream banks, wetlands, and riparian habitat.

The *Marin Countywide Plan* (1994) identifies the project site as being located in a Coastal Recreation Corridor. Through this plan, the County supports continuation of agricultural operations and agricultural land uses within the “pastoral zone” of Point Reyes National Seashore and Golden Gate National Recreation Area.

The *Marin County Local Coastal Program, Unit 2* discusses agriculture and encourages the continuation of this industry in the Coastal Zone. Although the portion of Kehoe Ranch located

west of Pierce Point Road is located within the Coastal Zone, the areas west of the road, including the proposed barn additions and new manure pond, are outside the Coastal Zone.

Marin County Code Title 22 (Zoning). The proposed project is consistent with the Coastal Open Space (C-O-A) zoning that allows conducting a dairy operation on 50 or more acres (Chapter 22.57.130). The objectives of this zoning district are to assure the promotion of agriculture, the preservation of scenic beauty, and the maintenance of such land in permanent open space.

1.4 Issues and Impact Topics

This document evaluates two alternatives and the impacts associated with each. Evaluation of the project site has identified the following issues of potential concern and provides the basis for the analysis of alternatives: natural resources, including vegetation, water resources, soils, topography, air quality, special-status species, and wildlife; cultural resources; visual quality; noise; public health and safety; and public services and utilities. These issues were developed from internal NPS review and public discussion on the project.

1.5 Reports Filed

All reports regarding this project will be filed and available at the Headquarters, Point Reyes National Seashore. This includes the biological survey report, the PRNS Hazardous Waste Plan, and the Marin County grading and building permits.

2. Alternatives, including the Proposed Action

2.0 Alternatives Considered in this Analysis

Two alternatives have been considered. These include No Action and one alternative for the location of the proposed project elements. Additional alternatives and options were initially considered for the barn additions and expansion of manure pond capacity, but were rejected or dismissed due to the severe topographic and physical limitations of the site and/or operational constraints. These alternatives and options are discussed subsequently in Sections 2.4 and 2.5.

2.1 Overview of Project Components

The Kehoe Dairy is located at 6150 Pierce Point Road on the Point Reyes Peninsula in western Marin County, California (APN 109-040-001). The dairy includes a total of 1,263 acres extending from the Pacific Ocean in the west to Tomales Bay in the east. The property is bisected in a north-south direction by Pierce Point Road which runs immediately west of the main dairy complex. See project location maps in Appendix A. The project area includes the entire area leased by the Kehoe Dairy from the NPS.

The various elements of the proposed project are listed below, and described in detail in the following paragraphs:

1. Construction of a free-standing addition to the west side of the existing freestall barn (and removal of the existing horse barn and calf lean-to shed).
2. Construction of a free-standing calf barn on the east side of the existing freestall barn, along with a new concrete apron and extension of the adjacent level calf enclosure to the east.
3. Construction of a new storage building.
4. Improvements to the dairy's stormwater drainage system.
5. Construction of an additional manure holding pond.
6. Restoration and revegetation of the year-round pasture area west of Pierce Point Road.

Western Addition to Freestall Barn. The freestanding addition on the west side of the freestall barn will provide protected housing for 150 cows and 100 percent containment of animal waste. Since the terrain at the site of the western barn addition slopes upward to the west, excavation and grading will be required to produce the required foundation grades. To make room for the barn addition, the existing horse barn and lean-to calf shed located to the west of the existing barn will be removed.

New Calf Barn and Adjacent Fill Area. On the east side of the existing freestall barn, a new freestanding calf barn will house calves displaced by removal of the lean-to calf shed for the western barn addition, described above. A new concrete apron will be constructed to the east and north of the calf barn. In addition, the area of open level calf enclosure adjacent to the east will be extended eastward approximately 100 feet by placing engineered fill on the downslope area that currently exists in this area.

New Storage Building. To replace the storage space lost by the removal of the old horse barn, a new storage building will be constructed to the west of the proposed western barn addition. The existing fuel tank stand which encroaches on the footprint of the new storage building will be moved to another location nearby.

Drainage Improvements at Dairy Complex. Clean surface runoff and roof drainage will be collected in roof gutters and underground storm drains and diverted around the barn complex. This will result in less clean stormwater entering the manure holding ponds, thus effectively increasing the usable capacity of those ponds to hold animal waste.

New Manure Holding Pond. The proposed new manure holding pond is located approximately 1,000 feet east of the dairy complex on the facing hillside across Kehoe Creek. The additional pond is needed to meet the increased capacity requirements resulting from the additional animal waste that will be generated by 150 additional cows housed in the new freestall barn addition. The pond will have a storage capacity of 11 acre-feet and a surface area of 1.33 acres.

Restoration and Revegetation of Degraded Areas. The pasture area on the west side of Pierce Point Road that is currently used to keep cattle year-round, including the wet winter months, is largely degraded by intensive animal use. Once the western addition to the freestall barn is completed, this area will be restored and reseeded with annual grasses.

The improvements to the dairy complex itself (i.e., freestall barn addition, calf barn, storage building, drainage improvements) are scheduled to be undertaken in the fall of 2003, prior to the rainy season. It is anticipated that the new manure holding pond would be constructed in the summer of 2004, and that the restoration and revegetation of degraded areas would occur in the fall of 2004, prior to the rainy season.

2.2 Alternative 1: No Action

Under the No Action alternative, there would be no additions to the freestall barn. As such, approximately 150 cows would continue to spend winters in the pasture area west of Pierce Point Road, resulting in continued risk of water quality degradation in Kehoe Creek and downstream aquatic habitat. In addition, the cows would be exposed to inclement weather with adverse effects on their health and milk production, as well as the overall viability of the dairy. While there may be opportunities for limited restoration and drainage improvements under the No Action alternative, as long as there is insufficient shelter capacity to accommodate the entire herd, there will continue to be degradation of the pasture area during winter months with

consequent risks to water quality from sediment and nutrients carried in stormwater runoff to Kehoe Creek.

2.3 Alternative 2 (Preferred): Construct freestall barn additions and new manure holding pond.

Western Addition to Freestall Barn

The freestanding addition on the west side of the freestall barn will measure 60 feet in width by 300 feet in length for an approximate total floor area of 18,000 square feet. (See Appendix B for site plans and building profiles.) The barn addition will provide protected housing for 150 cows and 100 percent containment of animal waste. Since the terrain at the site of the western barn addition slopes upward to the west, excavation and grading will be required to produce the required foundation grades (the excavated material will be used as fill on the eastern hillside as described below under “New Calf Barn”). To make room for the barn addition, the existing horse barn and lean-to calf shed located to the west of the existing barn will be removed.

New Calf Barn and Adjacent Fill Area

On the east side of the existing freestall barn, a new freestanding calf barn measuring 40 feet in width and 140 feet in length will be constructed. This barn will house calves displaced by removal of the lean-to calf shed for the western barn addition, described above. A new concrete apron will be constructed to the east and north of the calf barn. In addition, the area of open level calf enclosure adjacent to the east will be extended eastward approximately 100 feet by placing engineered fill on the downslope area that currently exists in this area. The fill material will be obtained from the excavation for the western barn addition described above. This will result in finished slopes of no greater than 2:1 (horizontal:vertical), which will conform with Marin County code requirements. The overall earthwork quantity in the barn area will total approximately 3,400 cubic yards, which will be balanced between and excavation and fill areas on either side of the barn. Standard measures for temporary and permanent erosion control and slope stabilization will be employed as specified in the Erosion Control Plan for the project.

New Storage Building

To replace the storage space lost by the removal of the old horse barn, a new storage building will be constructed to the west of the proposed western barn addition. The new storage building will measure 25 feet by 100 feet and will be located above and parallel to the cut slope for the western barn addition. The existing fuel tank stand which encroaches on the footprint of the new storage building will be moved to another location nearby. The storage building will have monoslope roof and will be about 14 feet high on the western side and about 12.5 feet high on the eastern or downslope side of the roof. The building exterior will consist of metal siding in a board-and-batten pattern which will be painted red. The exterior texture and color are intended to be similar to the existing horse barn which will be removed. Sliding doors for equipment and vehicles will be placed on the west and south facades, and will have the same surface treatment.

The roof will consist of unpainted corrugated metal, and will be similar in slope, texture and color to the roofs on the existing freestall barn and planned western barn addition.

Drainage Improvements at Dairy Complex

As noted, clean surface runoff and roof drainage will be collected in roof gutters and underground storm drains and diverted around the barn complex. The clean stormwater will be conveyed to two existing v-ditches commencing at the northeast and southeast corners of the barn complex and conveyed to Kehoe Creek to the east. Rock armoring will be installed at the upstream ends of both v-ditches near the top of the eastern sideslope of the ridge. No downstream alterations will be made to these drainage ditches, and no new drainage ditches are proposed.

New Manure Holding Pond

The proposed new manure holding pond is located approximately 1,000 feet east of the dairy complex on the facing hillside across Kehoe Creek. The additional pond is needed to meet the increased capacity requirements resulting from the animal waste that will be collected from 150 additional cows housed in the new freestall barn addition. (Although the overall size of the herd will not increase, the waste from these 150 cows is currently deposited directly to the year-round pasture area west of Pierce Point Road and does not enter the manure management system.) The pond will have a storage capacity of 11 acre-feet and a surface area of 1.33 acres. The material excavated for the pond will total approximately 13,800 cubic yards and will be used entirely in the construction of the containment levees required on the downslope edges of the pond, with the levee heights ranging from 0 to 20 feet. The addition of the pond will bring the overall waste storage capacity at the dairy to approximately 19 acre-feet, which will provide sufficient capacity to store the accumulated waste, as well as runoff from the 10-year wet winter and from the 25-year, 24-hour storm, in accordance with regulatory requirements. (For detailed hydrological calculations, see the report by Erickson Engineering in Appendix C.)

The new pond will be the fourth in a system of manure holding ponds serving the dairy. Operationally, the manured water initially drains from the dairy to a primary holding pond and a small overflow pond, both located downslope to the northeast. As solids settle, the wastewater is pumped into tanker trucks or temporary irrigation lines for dispersal over dry grassland areas elsewhere on the ranch. When wastewater accumulation in the primary pond exceeds the rate of withdrawal for land application, excess flows are pumped across Kehoe Creek via a system of surface-laid liquid transfer pipes to the existing third pond located approximately 1,300 feet away on the opposite hillside. As levels in the primary pond recede, wastewater from the third pond is released and drains by gravity through the same transfer pipes back to the primary pond where it is pumped out for dispersal. With the addition of the proposed fourth pond, wastewater will be routed from the third pond to the new pond before being released back to the primary pond. These liquid transfers will be accomplished through the existing piping system, with the exception of short sections of pipe to provide system connections to the new pond. The holding ponds operate as an integrated manure management system designed to avoid discharges or overflows of wastewater and to prevent water quality impacts to nearby watercourses and aquatic resources.

Restoration and Revegetation of Degraded Areas

The pasture area on the west side of Pierce Point Road that is currently used to keep cattle year-round is largely by intensive animal use. Once the western addition to the freestall barn is completed, this area will be restored and reseeded with annual grasses. Once vegetation is well established and the area is stabilized, seasonal grazing would occur in late spring and early summer when the forage value of this area would be high. The restoration of the degraded areas will be implemented in accordance with the recommendations of a qualified agronomist.

2.4 Alternative Considered but Rejected

Manure Pond Alternative

One other alternative for increasing the manured water storage capacity for the dairy was initially considered. This alternative consisted of enlarging the existing manure pond upslope and east of the proposed pond location. This alternative was discarded due to the significant impacts to the existing wetland habitat along the margins of the pond that would result from pond enlargement. In addition, this alternative would pose substantial operational difficulties arising from the necessity of keeping the pond off-line while it is being enlarged. As such, no further consideration of the pond enlargement alternative is warranted.

2.5 Other Project Options Initially Considered but Dismissed

The following additional options for the project elements were considered in the initial planning stages but were dismissed as being infeasible due to physical or operational constraints. These options are briefly discussed below.

Optional Location for Freestall Barn

The dairy complex is located on a ridge top, and the project is confined by relatively steep downslopes and Kehoe Creek to the north and east, and existing dairy facilities and Pierce Point Road to the south and west. As such, there is not a sufficient amount of level land available on the east side of Pierce Point Road, adjacent to the main dairy complex, where the freestall barn could be relocated. It might be possible to locate all or a portion of the freestall barn on the west side of Pierce Point Road; however, this option would not be operationally feasible due to the distances that would be required for cows to travel back and forth to the milking barn. In addition, the construction of a new freestall barn on the west side of Pierce Point Road would be highly visible to visitors, whereas the proposed barn additions would be largely hidden from public view. Thus there is no feasible alternative location for the freestall barn and its proposed additions, other than the existing/proposed location.

Optional Location for Manure Pond Expansion

The potential locations for a new or expanded manure holding pond are also limited by topography and operational considerations. The possible expansion of the existing two manure ponds on the south side of Kehoe Creek, adjacent to and downslope of the main dairy complex, was briefly considered. However, pond expansion at this location is physically constrained on the north by the creek itself and on the south by a steep hillside. In addition, these ponds are located within the designated 300-foot setback zone along Kehoe Creek which is protected by the U.S. Fish and Wildlife Service as a migration and dispersal corridor for the federally-threatened California red-legged frog. Pond expansion within the 300-foot setback area would adversely affect the migration habitat of the red-legged frog. In addition, ponds adjacent to the creek would be subject to potential overflow due to flooding along the creek. As such, further consideration of potential pond locations along Kehoe Creek was not warranted.

While there may be locations elsewhere on the ranch which could be physically suitable for a new manure pond, they would be located at greater distances from the dairy than the proposed location and thus would require longer distances to pump the manured water. Thus there are no feasible alternative locations for the proposed new manure holding pond.

The proposed location for the new manure pond on the hillside opposite the dairy complex is the only location in the vicinity where slopes are not too steep, and where the operational objective of receiving overflow by gravity from the existing manure pond upslope to the north can be achieved. In addition, the proposed pond site consists entirely of annual grassland where construction would have no significant effects on biological or other resources.

3. Affected Environment

3.1 Project Site Description

The Kehoe Dairy complex is located on a relatively small ridgetop area bounded on the north and east by downslopes trending toward Kehoe Creek several hundred feet away. The complex is bisected in a north-south direction by Pierce Point Road, with most of the barns, dwellings and other structures located on the east side of the highway, with only a large hay barn, a calf barn, and the year-round cow pasture located on the west side. The dairy complex sits at the center of a 1,263-acre ranch extending from the Pacific Ocean in the west to Tomales Bay in the east. It is bounded on the north by the non-operating Pierce Ranch, on the southwest by the I Ranch (McClure Dairy) and on the southeast by the K Ranch. The dairy complex sits at an elevation of 167 feet while the highest point on the ranch is about 645 feet.

The J Ranch was established in the 1860s and the Kehoe's have operated the dairy since 1922, shipping their milk directly to Clover Stornetta Farms. Most of the original dairy structures, such as the original house, dairy, hay barn, and calf shed have been replaced by newer buildings. Only the horse barn and workshop remain from the old ranch, and both are in poor condition. Other existing buildings include four residences, the freestall barn, milking barn, hay barn, workshop, calf lean-to shed, and various outbuildings and structures.

Approximately 40 acres of pasture near the dairy complex are used as feeding and exercise areas for dairy cows. The portion of pasture used for year-round use on the west side of Pierce Point Road has become degraded by intensive animal use. The remainder of the ranch is largely used for seasonal grazing and silage production, although portions of the property consist of inaccessible terrain or are covered with unusable brush.

The proposed barn additions and new storage building would be located in the central area of the dairy complex, adjacent to the existing freestall barn. The proposed new manure holding pond would be located on the facing hillside east of Kehoe Creek, approximately 1,000 feet from the dairy complex.

3.2 Use Permit and Lease Status

The Kehoe family has an agricultural lease/permit with PRNS to operate the dairy. The lease has renewal clauses and is reviewed every five years. Currently, the dairy is operating on a year-to-year lease with PRNS.

3.3 Current Facilities and Improvements

The dairy operation consists of the following structures and facilities:

Housing. The current main residence was constructed in 1964, with five additional single-family houses constructed since, and a modular home added in 2001. Four of the dwellings are occupied by members of the Kehoe family, and three units are for housing employees. The original ranch house no longer exists.

Barns and Other Structures. The dairy complex includes the freestall barn, milking barn, old horse barn (used for storage), hay barn, calf barn, workshops, lean-to calf shed, fuel tank stand, water wells, various sheds and outbuildings, silage storage area, and corrals. Some of the buildings, such as the old horse barn and shop, date from the 1860s, with the remaining structures having been added during the intervening years.

Manure Management Facilities. Solid waste from the freestall barn and other feeding areas is stockpiled to the north of the barn, and the dry material is spread onto the fields annually in the late summer and fall. The liquid waste is conveyed to a series of three holding ponds. The manured water initially drains from the dairy to a 0.43-acre primary holding pond and a small 0.09-acre overflow pond, both located downslope to the northeast of the freestall barn. As sediment settles, the decanted wastewater is pumped into tanker trucks or temporary irrigation lines for dispersal over dry grassland areas elsewhere on the 1,263-acre ranch. The wastewater is applied to the pastures at accepted agronomic rates for forage production purposes. As stored wastewater volumes approach the capacity of the primary and overflow ponds, excess flows are pumped across Kehoe Creek via a system of surface-laid liquid transfer pipes to a third 0.9-acre pond located approximately 1,300 feet away on the opposite hillside. As levels in the primary pond recede, wastewater from the third pond is released and drains by gravity through the same transfer pipes back to the primary pond where it is pumped out for dispersal. All of the ponds are clay-lined to prevent seepage and all are dredged annually to remove accumulated waste and sediments, and to restore storage capacity.

3.4 Utilities

Electrical service to Kehoe Dairy is provided by Pacific Gas & Electric Company (PG&E), and telephone service is provided by Pacific Bell. As no natural gas service is available, and the dairy relies butane and electric power for heating. There is no municipal water supply or sanitary sewer service available at the Kehoe Dairy. Potable water for domestic use is supplied by two on-site wells, and non-potable water for the dairy operation is piped down from a spring-fed stock pond located approximately 2,000 feet to the northeast. Domestic wastewater is disposed of through septic systems connected to each residence. Animal waste disposal is described in Section 3.3 above.

3.5 Geology, Topography, and Soils

The site is underlain by Pliocene Era (2-5 million years old) Wilson Grove formation bedrock consisting of siltstone, mudstone, sandstone, and shale that has been subjected to weathering and decomposition. The barn construction site sits on the eastern flank of a gentle hilltop ridge crest at 0-15% slope, and the new holding pond site is on a hillside with a slope of 5-15% slope. There is no evidence of seepage, soil creep, or landslide-type instability at either construction site.

Since the geologically active San Andreas Fault Zone is located about two miles to the east in Tomales Bay, it is likely that the proposed improvements would be subject to ground shaking during the life of the project. Due to the absence of known earthquake faults in the immediate vicinity, the probability of surface rupture is low. Similarly, there is a low probability of seismically-induced effects such as liquefaction, lateral spreading or lurching due to the moderately cohesive well-drained nature of surficial material at the site.

The soils at both work sites consist of Kehoe loam (9-15% slopes). This deep, moderately well-drained soil has moderate water holding capacity and high erosion potential on unprotected slopes. Plasticity is low to moderate indicating low to moderate potential for soils expansion.

3.6 Vegetation

The freestall barn is located near the center of the dairy complex which is devoid of vegetation due to intensive use by cattle and equipment throughout the year. Several ornamental landscape species occur around the residences on the perimeter of the dairy complex.

The proposed manure holding pond is located in non-native grassland that is used for cattle grazing. Kehoe Creek, a perennial creek which runs between the dairy complex and the new manure pond location, supports a narrow band of riparian scrub consisting primarily of willows. An ephemeral stream, which runs downslope just west of the holding pond site to Kehoe Creek, also supports a narrow band of riparian scrub, with northern coastal scrub appearing on the sides of the ravine. (For a detailed description of vegetation in the project vicinity, see the biological survey report in Appendix D.)

3.7 Water Resources

The primary water source for non-potable water on the Kehoe Dairy is an existing stock pond located at the upstream end of Kehoe Creek approximately 2,000 feet northwest of the dairy complex. Water piped down from this pond provides for all the non-potable water requirements of the dairy operation. Potable water for domestic and dairy use is obtained from two domestic wells located near Pierce Point Road within the dairy complex.

Runoff from the dairy complex and the year-round pasture area contains nutrient and sediment loads that reach Kehoe Creek and pose a risk of ongoing water quality impact. Water quality

data obtained from monitoring conducted in Kehoe Creek near the dairy complex indicates elevated levels of contaminants.

3.8 Historic and Cultural Resources

Founded by Oscar and James Shafter, the dairy ranches of Point Reyes were once acknowledged as the most important in California and were famous for their quality product. The J Ranch (Kehoe), the northernmost Shafter ranch, was settled in the 1860s, and the Kehoe family has operated a dairy there since 1922. Most of the original structures have been replaced with modern buildings. Only the horse barn and workshop remain from the old ranch, and both are in poor condition. The horse barn, while retaining some of the original roofline, has been altered a great deal and has no integrity. The old workshop, moved to its present site from another area on the ranch, has no apparent historic integrity. In the document *Ranching on the Point Reyes Peninsula*, it states the following regarding the significance of the J Ranch:

“J Ranch is a significant part of the Shafter’s and Howard A to Z ranch enterprise and the dairy industry in Marin County. However, the structures at the J Ranch retain no historic integrity or significance. The old Pierce Point Road along the ridgeline to the east of the ranch complex is significant as an original transportation route of Point Reyes.”

The land within the PRNS boundaries containing historically significant dairy ranches has been determined to be eligible for listing on the National Register of Historic Places as a rural historic landscape district. The entire Point Reyes Peninsula, including the Kehoe Ranch, is included in the potential district. The Point Reyes National Seashore is currently preparing a Cultural Landscape Report which will contain guidelines for maintaining the character of the historic landscape and physical structures on the ranches.

With respect to prehistoric archaeological resources, the PRNS archaeological base map indicates that there are no recorded archaeological sites in the vicinity of the project site. An intensive site survey was conducted by the PRNS Archaeologist in 2001 as part of the Archaeological Clearance Survey for the project. The survey found no surface evidence of archaeological resources within the project boundaries.

3.9 Wildlife

Within the dairy complex, structures such as the horse barn provide potential roosting habitat for various bird and bat species. Evidence of previous nesting activity by either barn swallows or black phoebe was observed in the barn. No evidence of bat use was observed in any of the structures in the dairy complex. The ornamental landscaping associated with the dairy residences may provide perching and roosting sites for a small number of avian species, such as Anna’s hummingbird. However, ornamental plants provide poor quality habitat for most wildlife species, which are unlikely to use this habitat except for temporary cover and resting.

The non-native grassland habitat of the new manure pond site provides habitat for various wildlife species including lizards, salamanders, birds (e.g., California quail, mourning dove, meadowlark), and mammals such (e.g., California vole, deer mouse, Botta's pocket gopher, California ground squirrel, black-tailed jackrabbit, and black-tailed deer). Small rodents attract raptors such as owls, red-tailed hawks, northern harriers, and white-shouldered kites, among others. The grassland habitat also provides movement corridors for medium and large mammals such as raccoon, skunk, and black-tailed deer.

The riparian corridors along Kehoe Creek and its ephemeral tributary to the northeast provide habitat for a variety of bird species, as well as mammals such as raccoon and striped skunk. The creek is unsuitable for many of the fish species in the region due to its dense canopy and shallow water. (For a detailed description of wildlife, see the biological survey report contained in Appendix D.)

3.10 Special-Status Species

The biological survey report for the project identified eight special-status plant species that could potentially occur at that project site. (The "project site" is defined as those areas subject to ground disturbance as a result of the proposed barn expansion and construction of the new manure pond.) A full listing of special-status plant species, along with the status and likelihood of occurrence of each, is presented in Appendix B of the biological survey report. The survey report (in Appendix D) indicates that no suitable habitat occurs at the project site to support any of the eight special-status plant species.

A total of 22 special-status wildlife species have been recorded in the region which have the potential to be present at the project site. Of these, four bird species are considered to have high to moderate potential to occur on the site. These include: barn swallows and black phoebe, which both have high potential for nesting in the horse barn; and western meadowlark and California horned lark, which have moderate potential for ground nesting in the grasslands of the proposed holding pond site. (Nesting birds are projected under the Migratory Bird Treaty Act.) A full listing of special-status wildlife species, along with the status and likelihood of occurrence of each, is presented in Appendix B of the biological survey report.

The California red-legged frog (*Rana aurora draytonii*)(CRLF) is the only federally-listed (as threatened) species with potential to occur in the vicinity of the project site. Potential breeding habitat occurs at the large stock pond located approximately 2,000 feet northwest of the dairy complex, and at Kehoe Marsh, located on Kehoe Creek approximately one-half mile to the south. In the project vicinity, Kehoe Creek and the nearby ephemeral stream provide movement and dispersal corridors for the CRLF. The entire Point Reyes peninsula has been designated as "critical habitat" for the CRLF by the US Fish and Wildlife Service (USFWS). Upland habitat areas within 300 feet of the banks of breeding ponds and streams are protected under the critical habitat designation. The areas of ground disturbance associated with the proposed barn expansion and the construction of the new manure holding pond are more than 300 feet from Kehoe Creek. However, the grading for the new manure holding pond would extend to approximately 70 feet from the ephemeral stream.

Potential habitat for the western burrowing owl (*Athene cunicularia hypugaea*), a federal and state species of concern, occurs in the grassland area of the proposed manure pond site. An essential element of burrowing owl habitat is the existence of burrows dug by small mammals such as ground squirrels. Although the grassland area contains short grasses suitable for nesting and foraging by the burrowing owl, no ground squirrel burrows are present in the area of the proposed pond. In addition, the grassland area is actively grazed by cattle that could damage nests and nestlings. As such, the site of the proposed holding pond is not considered suitable habitat for the burrowing owl.

The structures of the dairy complex provide potential habitat for several protected bat species, including big brown bat, little brown bat, Yuma myotis, Brazilian free-tailed bat, pallid bat, and others. However, based on the structure of the buildings, no potential roosting habitat for bats occurs within the project site. The biological field survey found no evidence of bat activity at the dairy complex.

3.11 Recreation

In 2000, PRNS had over 2 million visitors. Recreational use in the pastoral zones occurs mainly on roads and trails. Each month, over 27,800 visitors traveled along Pierce Point Road. Major destinations include McClure's Beach (over 8,000 visitors), Kehoe Beach (nearly 7,000 visitors), Abbotts Lagoon (over 5,500 visitors), and Pierce Point Ranch (nearly 7,000 visitors.) Visitation has been quite stable over the past 10 years, so these figures would be representative of current conditions.

4. Environmental Consequences

4.1 Impact Analysis

This section describes the probable consequences (or impacts) of each alternative on the resources of the project area. The discussion of each impact topic begins with a description of the methods applied in the analysis. The impacts are characterized as to type of impact (i.e., adverse or beneficial) and intensity of impact (i.e., none, negligible, or significant). Impacts are also characterized in terms of duration (i.e., short-term or long-term), with examples of short-term impacts including temporary noise, dust, and soil disturbance associated with construction activities, and long-term impacts referring to more-or-less permanent impacts such as loss of wildlife habitat. As appropriate, the impact discussions describe measures proposed to be incorporated into the project to avoid or reduce impacts to less-than-significant levels.

Cumulative impacts associated with each impact topic are also assessed. Cumulative impacts are defined as effects on the environment that result from the incremental impacts of an action when added to other past, present, or reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. The analysis of cumulative impacts considers the combined impact of this project and other actions in the Northern District of Point Reyes National Seashore, including the pastoral zone. A comprehensive list of reasonably foreseeable actions is provided in Appendix E. Most of these projects are located in the Olema Valley or other relatively distant locations and are unlikely to add to cumulative effects resulting from the proposed action. The only other project in relatively close proximity is the McClure Ranch located two miles to the south, where a new 80,000 square-foot freestall barn, improvements to the manure management system, a new residence, and related enhancements were constructed in 2003. Since this is the only foreseeable project which could contribute cumulatively to any impacts associated with the project, the cumulative impact discussions for each impact topic address only the combined effects of the project and the McClure Ranch project.

A glossary of terms used in the following evaluation is provided in Appendix F.

4.2 Alternative 1: No Action

4.2.1 Impacts on Natural Resources

Vegetation

Methodology. Vegetation in the project area was surveyed by Wildlife Research Associates, who conducted a reconnaissance-level survey of the site on October 15, 2002. Dominant plant species and vegetation communities were recorded. Impacts were assessed based on the extent and nature of the vegetation affected by the project.

Impact Analysis. Impacts to vegetation would be limited to those associated with activities already occurring on site. Some pasture restoration is likely to occur, which would represent a beneficial effect.

- *Cumulative Impact:* Since impacts to vegetation associated with the McClure Dairy project will be reduced to less-than-significant levels with incorporated measures, and since no impacts would result from the no action alternative, there would be no cumulative impact to vegetation.
- *Conclusion:* No new impacts to vegetation would occur under this alternative. Based on the above discussion of potential impacts to vegetation, there would be no long-term impairment to vegetation.

Water Resources

Methodology. Information on water resources and water quality as based on water quality data obtained from monitoring conducted in Kehoe Creek near the ranch complex. The characterization of impacts to water resources was based on assessment of effects of dairy operational changes upon the quality of stormwater discharges to Kehoe Creek.

Impact Analysis. The risk of water quality impacts would remain. The year round use of the pasture area near Kehoe Creek would continue to generate stormwater runoff with entrained sediments and nutrients that would continue to pose a risk of water quality impact in Kehoe Creek. However, since the risk of water quality impacts would not increase under this alternative, there would be no significant impact.

- *Cumulative Impact:* With the enhancements to the manure management system planned at McClure Dairy, water quality in the general area should improve. However, since the McClure and Kehoe Dairies are located in different watersheds, the water quality in Kehoe Creek would not benefit cumulatively from these improvements.
- *Conclusion:* No new impacts to water resources would occur under this alternative. Based on the above discussion of potential impacts to water resources, there would be no long-term impairment to water resources.

Air Quality

Methodology. The evaluation of potential air quality impacts was based on consideration of new air pollutant generation involved in the alternative, and on the measures to be incorporated into the alternative to minimize generation of air pollutants.

Impact Analysis. Impacts would be limited to those associated with activities already occurring on site.

- *Cumulative Impact:* Although there may be a slight increase in dust generation associated with construction at the McClure Dairy, the cumulative impacts to air quality would not be significant.
- *Conclusion:* No impacts to air quality would occur under this alternative. Based on the above discussion of potential impacts to air quality, there would be no long-term impairment to air quality.

Wildlife

Methodology. Wildlife habitats in the project area were surveyed by Wildlife Research Associates, which conducted a reconnaissance-level survey of the site on October 15, 2002. Dominant wildlife habitats were recorded. Impacts were assessed based on the extent and nature of the wildlife habitat affected by the project.

Impact Analysis. The potential for negative impacts to wildlife due to ongoing impacts to water quality in downstream reaches of Kehoe Creek would remain. However, since the risk of water quality impacts would not increase under this alternative, likewise there would be no new significant impacts to wildlife.

- *Cumulative Impact:* With the enhancements to the manure management system planned at McClure Dairy, the water quality in the aquatic habitat of Abbotts Lagoon would improve. However, since the McClure and Kehoe Dairies are located in different watersheds, the water quality and aquatic habitats in Kehoe Creek would not benefit cumulatively from these improvements.
- *Conclusion:* No new impacts to wildlife would occur under the no action alternative. Based on the above discussion of potential impacts to wildlife, there would be no long-term impairment to wildlife habitat.

Special-Status Species

Methodology. Information on special-status plant species was compiled by Wildlife Research Associates through review of the *California Natural Diversity Data Base* (CNDDB, 2002) for the Tomales 7.5-minute topographic quadrangle, the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plant of California* (Skinner and Pavlik, 1999), the California Department of Fish and Game's (CDFG) *Special Plants List* (CDFG, 2002a), and the U.S. Fish and Wildlife Service list of special-status plants (USFWS, 2002). No focused surveys for special-status plant species were conducted for purposes of this assessment. The potential for special-status plants to occur on the project site, and the corresponding potential for impacts, was determined through the identification of vegetation communities on the site and their ability to support special-status plants known to occur in the area.

A list of special-status wildlife species known or expected to occur on the site was compiled through a review of the CNDDB (CNDDB, 2002), the CDFG's *Special Animals List* (CDFG, 2002b), the publication *State and Federally Listed Endangered and Threatened Animals of*

California (CDFG, 2002c), and the U.S. Fish and Wildlife Service list of special-status animals (USFWS, 2002). No focused surveys for special-status wildlife species were conducted for purposes of this assessment. The potential for special-status wildlife to occur on the project site, and the corresponding potential for impacts, was determined through the identification of wildlife habitats on the site and their ability to support special-status wildlife species known to occur in the area.

Impact Analysis. Water quality problems related to ongoing nutrient and sediment generation would continue to affect California red-legged frog breeding habitat in downstream reaches of Kehoe Creek. However, since the risk of water quality impacts would not increase under this alternative, likewise there would be no new significant impacts to California red-legged frog breeding habitat.

- *Cumulative Impact:* With the enhancements to the manure management system planned at McClure Dairy, the water quality in the red-legged frog breeding habitat of Abbotts Lagoon would improve. However, since the McClure and Kehoe Dairies are located in different watersheds, the red-legged frog breeding habitats in Kehoe Creek would not benefit cumulatively from these improvements.
- *Conclusion:* No new impacts to red-legged frog habitat would occur under the no action alternative. Based on the above discussion of potential impacts to special-status species, there would be no long-term impairment to red-legged frog habitat.

Soils

Methodology. The evaluation of potential impacts to soils was based on the proposed grading involved in the alternative, and proposed erosion control and slope stabilization measures to be incorporated in the alternative.

Impact Analysis. The potential for soil erosion at the year-round pastures would remain. However, since the potential for soil erosion would not increase under this alternative, there would be no significant impact.

- *Cumulative Impact:* Although there may be a slight increase in soil erosion associated with construction at the McClure Dairy, the cumulative impacts to soils would not be significant.
- *Conclusion:* No new erosion and sedimentation impacts would occur under this alternative. Based on the above discussion of potential impacts to soils, there would be no long-term impairment due to soil erosion.

Topography

Methodology. The evaluation of the impact to topography was based on review of topographic changes reflected in project grading plans, and determining the significance of these terrain modifications in terms of location and proposed slope stabilization measures.

Impact Analysis. No new impacts would occur since there would be no change in topography.

- *Cumulative Impact:* Although there will be terrain alteration involved with construction at the McClure Dairy, the cumulative impacts to topography would not be significant.
- *Conclusion:* No impacts to topography would occur under this alternative. Based on the above discussion of potential impacts to topography, there would be no long-term impairment to topography.

Cumulative Impact: Although the construction activities at McClure Dairy would result in some residual impacts, when taken together with the absence of new impacts associated with the no action alternative, there would be no cumulatively significant impact.

Conclusion: Under the no action alternative, impacts to water resources would continue to occur. Nutrient and sediment loading of Kehoe Creek would continue and the risk of water quality impairment would remain. Some limited restoration and enhancement activities could occur. However, no new impacts to natural resources would occur under this alternative. Based on the above discussion of potential impacts to natural resources, there would be no long-term impairment to natural resources.

4.2.2 Impacts on Cultural Resources

Methodology. The evaluation of impacts to historic resources was based on the document *Ranching on the Point Reyes Peninsula* (PRNS, 1994), and correspondence from the State Office of Historic Preservation (SHPO), dated April 3, 1995, regarding the determination of eligibility for Point Reyes dairy ranches to be listed on the National Register of Historic Places. The findings and conclusions of these documents with respect to the Kehoe Dairy is summarized under 'Affected Environment' above.

With respect to impacts to prehistoric archaeological resources, the PRNS archaeological base map was consulted to identify any recorded archaeological sites in the vicinity of the project site. In addition, an intensive site survey of the Kehoe Dairy which was conducted by the PRNS Archaeologist in 2001 as part of the Archaeological Clearance Survey for the project.

Impact Analysis. There would be no direct impact on archaeological resources or historic structures or the historic landscape.

- *Cumulative Impact:* Since there would be no significant impacts associated with the McClure Dairy project, and no impacts resulting from the no action alternative, there would be no cumulative impact to cultural resources.

- *Conclusion:* No impacts to cultural resources would occur under the no action alternative. Based on the above discussion of potential impacts to cultural resources, there would be no long-term impairment to cultural resources.

4.2.3 Impacts on Visual Quality

Methodology. The assessment of potential impacts to visual resources was based on comparison of the alternative with baseline visual conditions. Determinations of impact were made in consideration of the nature and magnitude of the visual changes proposed, and the visual quality and general visibility of the affected area.

Impact Analysis. The dairy operations are visible from Pierce Point Road and other locations in Point Reyes National Seashore. No changes would occur. Areas heavily impacted by cows would continue to be visible.

- *Cumulative Impact:* Since the visual impacts associated with construction of the new McClure Dairy barn would be less-than-significant, and since no visual impacts result from the no action alternative, there would be no cumulative impact on visual quality.
- *Conclusion:* No impacts to visual quality would occur under the no action alternative. Based on the above discussion of potential impacts to visual quality, there would be no long-term impairment to visual quality.

4.2.4 Impacts on Human Health and Safety

Methodology. The evaluation of potential impacts to human health and safety was based on the conformance of the alternative with: public health regulations applicable to wastewater disposal; building codes and seismic safety requirements; regulations governing the handling, storage and disposal of hazardous materials; and other applicable laws and regulations.

Impact Analysis. There would be no direct impacts to human health and safety.

- *Cumulative Impact:* Since the McClure Dairy project would not result in significant impacts to human health and safety, and since the no action alternative would result in no health and safety impacts, there would be no cumulative impact on human health and safety.
- *Conclusion:* No impacts to human health and safety would occur under the no action alternative. There would be no long-term impacts to human health and safety.

4.2.5 Noise Impacts

Methodology. The evaluation of potential noise impacts was based on a comparison of existing noise sources with new noise sources included in the alternative, and in consideration of the

likely presence of sensitive noise receptors (i.e., park visitors and off-site residences) that would be affected by changes in noise levels.

Impact Analysis. Noise is currently generated by use of heavy equipment, pumps, and dairy-related truck and automobile traffic. Noise levels would continue to be at the same levels.

- *Cumulative Impact:* The construction of the McClure Dairy improvements would involve short-term construction noise. However, since that activity would be two miles from the Kehoe Dairy, and since the no action alternative would result in no new noise, there would be no cumulative impact with respect to noise.
- *Conclusion:* No noise impacts would occur under the no action alternative. There would be no long-term impacts related to noise.

4.2.6 Impacts on Public Facilities and Services

Methodology. The evaluation of potential impacts to public facilities and services was based on consideration of the increased demand for service involved in the alternative, and the availability of sufficient service capacity to accommodate the alternative.

Impact Analysis

Water Supply. There are no public water supplies to the dairy or its residences. Water supply and amount of use would be unchanged.

- *Cumulative Impact:* Increased water supplies required for the enhancements to the McClure Dairy manure management system would be drawn from a separate watershed and would not affect the Kehoe Dairy water supply. Since the no action alternative would involve no increase in water consumption, there would be no cumulative impact on water supply.
- *Conclusion:* No impacts to water supply would occur under the no action alternative. There would be no long-term impact to public water supplies.

Roadways and Public Transportation. Public roadways and transportation would not be affected.

- *Cumulative Impact:* The McClure Dairy construction project would result in a short-term increase in traffic by construction vehicles and equipment. Since the no action alternative would generate no new traffic, there would be no cumulative impact on roadways and public transportation.
- *Conclusion:* No impacts to roadways and public transportation would occur under the no action alternative. There would be no long-term impact to roadways and public transportation.

Energy Consumption. Energy consumption would remain at current levels.

- *Cumulative Impact:* The improvements to the McClure Dairy would result in increased energy consumption both during the construction and operational phases. Since the no action alternative would result in no increased use of energy, there would be no cumulative impact on energy consumption.
- *Conclusion:* No impacts to energy consumption would occur under the no action alternative. There would be no long-term impact to energy resources.

Police Protection. No change in police protection services would be needed.

- *Cumulative Impact:* The McClure Dairy improvements would not result in significant impacts to police protection services. Since the no action alternative would result in no increase in demand for police service, there would be no cumulative impact on police protection services.
- *Conclusion:* No impacts to police protection services would occur under the no action alternative. There would be no long-term impact to police protection services.

Fire Protection. No change in fire protection services would be needed

- *Cumulative Impact:* The McClure Dairy improvements would not result in significant impacts to fire protection services. Since the no action alternative would result in no increase in demand for fire protection, there would be no cumulative impact on police protection services.
- *Conclusion:* No impacts to fire protection services would occur under the no action alternative. There would be no long-term impact to fire protection services.

Schools. No change in enrollment in local schools would occur.

- *Cumulative Impact:* The McClure Dairy improvements include one new residence which could result in additional school enrollment. Since the no action alternative results in no additional school enrollment, there would be no cumulative impact on schools.
- *Conclusion:* No impacts to schools would occur under the no action alternative. There would be no long-term impact to schools.

Other Governmental Services. No new or increased levels of governmental services would be needed.

- *Cumulative Impact:* The McClure Dairy is not anticipated to result in increased levels of governmental services. Since the no action alternative would result in no increase in demand for governmental services, there would be no cumulative impact on governmental services.

- *Conclusion:* No impacts to governmental services would occur under the no action alternative. There would be no long-term impact to governmental services.

Utilities. There would be no increase in demand for electric power or telephone service under the no action alternative.

- *Cumulative Impact:* The McClure Dairy improvements would not result in a significant in demand for utilities service. Since the no action alternative would result in no increase in demand for utilities service, there would be no cumulative impact on police protection services.
- *Conclusion:* No impacts to utilities would occur under the no action alternative. There would be no long-term impact to utilities.

Cumulative Impact: The cumulative effect of the McClure Dairy project on public services and utilities, when considered with the effects of no action alternative, would not be significant.

Conclusion: No impacts to public services and utilities would occur under the no action alternative. There would be no long-term impact to public services and utilities.

4.2.7 Impacts on Local Economy

The number of dairies in Marin County is continuing to decline. In order to stay in business, existing operations must be efficient, productive, and good stewards of the land. Without the planned additions to the freestall barn, it would be more difficult for Kehoe Dairy to remain competitive. For example, having cows unsheltered in wet winters creates stressful conditions for the high-producing Holstein cows as they lose weight and have reduced reproductive capability. Without the barn additions, some feed would continue to be lost to wet weather spoilage or from being blown off the feeding truck. Given the declining milk prices and current feed costs, the Kehoe Dairy operation would remain less than optimally efficient.

- *Cumulative Impact:* The improvements at the McClure Dairy would have a beneficial effect on the dairy industry and the local economy generally. This could be somewhat offset by the no action alternative, which could contribute to the overall decline of the dairy industry in Marin County. The cumulative effect would likely be neutral or slightly beneficial.
- *Conclusion:* Negative impacts to the local economy would occur under this alternative. The Kehoe Dairy provides employment and supports the agricultural industry in Marin County. There could be a long-term impact to the local economy.

4.3 Alternative 2 (Preferred): Construct freestall barn additions and new manure holding pond

4.3.1 Impacts on Natural Resources

Vegetation

Methodology

Vegetation in the project area was surveyed by Wildlife Research Associates, who conducted a reconnaissance-level survey of the site on October 15, 2002. Dominant plant species and vegetation communities were recorded. Impacts were assessed based on the extent and nature of the vegetation affected by the project.

Impact Analysis

Expansion of the freestall barn and construction of the new manure holding pond would disturb approximately 4.0 acres of ground, of which approximately 1.1 acres would be at the barn site and 2.9 acres would be at the new manure pond site. The barn site is highly disturbed due to intensive cattle usage, and includes no vegetation. The barn is approximately 300 feet from Kehoe Creek at its nearest point.

The site of the new manure pond consists entirely of non-native grasslands. Kehoe Creek is located downslope 500 feet to the southeast and an ephemeral tributary is located approximately 70 feet from the bottom of the fill slope for the planned containment levee at its nearest point.

Construction of the barn additions would not result in the removal of existing vegetation and therefore would have no negative impacts on vegetation. The barn expansion project would allow for management changes at the Kehoe Dairy. Pastures which are currently grazed or used for year-round exercise/feeding areas would be restored and revegetated. Therefore, the project would have an overall beneficial or positive effect on vegetation in this pasture area.

The annual grasslands of the new manure pond site are common in the region and do not include any special-status plant species. Therefore, the removal of 2.9-acres of annual grasslands would not result in a significant impact to vegetation. However, the grasslands include potential habitat for two special status birds, species that could establish ground nests at this site. (Potential impacts to these bird species are discussed below under “Special-Status Species.”)

Neither the proposed expansion of the freestall barn nor the construction of the new manure pond would result in fill of wetlands or impacts to riparian habitat.

- *Cumulative Impact:* Since both the project and the McClure Dairy improvements would result in less-than-significant impacts to vegetation, there would be no cumulative impact on vegetation.

- *Conclusion:* Under this alternative, impacts to vegetation would be less than significant. Based on the above discussion of potential impacts to vegetation, there would be no long-term impairment to vegetation.

Water Resources

Methodology

Information on water resources and water quality was based on water quality data obtained from monitoring conducted in Kehoe Creek near the ranch complex. The characterization of impacts to water resources was based on assessment of effects of dairy operational changes upon the quality of stormwater discharges to Kehoe Creek.

Impact Analysis

The overall goal of the project is to improve water quality and reduce the risk of water quality impacts. This would be achieved by providing additional containment and management of cow manure within the expanded freestall barn, and by restoring and revegetating the year-round pasture area in order to reduce nutrients and sediments being conveyed in stormwater runoff to Kehoe Creek.

Grading would be limited to the immediate areas of the barn expansion and the new manure pond. Some short-term minor impacts could occur from ground disturbance and grading for the planned improvements. An *Erosion and Sediment Control Plan* prepared in compliance with the requirements of the County of Marin and the State Water Resources Control Board, will be implemented during grading and construction. Erosion control measures, such as placement of straw bales and silt fencing, would prevent sediment from entering Kehoe Creek or its ephemeral tributary.

Clean runoff from the dairy complex would be diverted around the manure management system using gutters, pipes, and v-ditches. The runoff would be discharged via existing drainage ditches east of the dairy complex. Keeping rain water out of the manure storage system helps maintain pond capacity throughout the winter. The barn additions would result in an increase in site coverage by impervious surfaces and a corresponding slight increase in clean runoff due to the loss of infiltration at the barn site.

- *Cumulative Impact:* Since both the project and the McClure Dairy improvements would result in beneficial effects to water quality, the cumulative impact to water quality would be beneficial.
- *Conclusion:* Impacts to water resources would be beneficial under this alternative. Based on the above discussion of potential impacts to water resources, there would be no long-term impairment to water resources.

Air Quality

Methodology

The evaluation of potential air quality impacts was based on consideration of new air pollutant generation involved in the alternative, and on the measures to be incorporated into the alternative to minimize generation of air pollutants.

Impact Analysis

The new dairy improvements would not release significant air pollutants. Some dust would be generated during construction activities. This would be reduced by watering disturbed areas. Since project grading would balance on site, there would be no need to import or export earth materials to or from the site, thus avoiding potential dust blown from haul trucks. Materials from the demolished buildings would be hauled off-site in covered trucks to prevent wind-blown dust and debris.

- *Cumulative Impact:* Since both the project and the McClure Dairy improvements would result in less-than-significant air quality impacts, there would be no cumulative impact to air quality.
- *Conclusion:* Impacts to air quality would be less than significant under this alternative. Based on the above discussion of potential impacts to air quality, there would be no long-term impairment to air quality.

Wildlife

Methodology

Wildlife habitats in the project area were surveyed by Wildlife Research Associates, which conducted a reconnaissance-level survey of the site on October 15, 2002. Dominant wildlife habitats were recorded. Impacts were assessed based on the extent and nature of the wildlife habitat affected by the project.

Impact Analysis

The project would allow the discontinuation of nearby pasture area for year-round use, and would provide for the restoration and revegetation of this area. This would create additional area of wildlife habitat. Reduced nutrient and sediment loading to Kehoe Creek would also improve the habitat value of the creek.

Wildlife that currently use the site are accustomed to the existing noise and human activity levels. Short-term construction activities are unlikely to result in permanent displacement of wildlife. Because the proposed project would result in only temporary and localized impacts on wildlife, these effects are considered less than significant since animals and birds would be expected to return to the area once construction activities are completed. As discussed under 'Special-Status Species' below, demolition, grading and construction would not be permitted to

occur during periods of active bird nesting at either the barn expansion site or the new manure pond site.

- *Cumulative Impact:* Both the project and the McClure Dairy improvements would have a mix of beneficial and negative effects to wildlife, although the impacts associated with both projects would all be reduced to less-than-significant levels with incorporated measures. Thus there would be no cumulative impact to wildlife.
- *Conclusion:* Impacts to wildlife would be less than significant under this alternative. Based on the above discussion of potential impacts to wildlife, there would be no long-term impairment to wildlife or wildlife habitat. The reduced pollutant loadings to Kehoe Creek would have a long-term beneficial effect on aquatic habitat.

Special-Status Species

Methodology

Information on special-status plant species was compiled by Wildlife Research Associates through review of the *California Natural Diversity Data Base* (CNNDDB, 2002) for the Tomales 7.5-minute topographic quadrangle, the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plant of California* (Skinner and Pavlik, 1999), the California Department of Fish and Game's (CDFG) *Special Plants List* (CDFG, 2002a), and the U.S. Fish and Wildlife Service list of special-status plants (USFWS, 2002). No focused surveys for special-status plant species were conducted for purposes of this assessment. The potential for special-status plants to occur on the project site, and the corresponding potential for impacts, was determined through the identification of vegetation communities on the site and their ability to support special-status plants known to occur in the area.

A list of special-status wildlife species known or expected to occur on the site was compiled through a review of the CNDDDB (CNDDDB, 2002), the CDFG's *Special Animals List* (CDFG, 2002b), the publication *State and Federally Listed Endangered and Threatened Animals of California* (CDFG, 2002c), and the U.S. Fish and Wildlife Service list of special-status animals (USFWS, 2002). No focused surveys for special-status wildlife species were conducted for purposes of this assessment. The potential for special-status wildlife to occur on the project site, and the corresponding potential for impacts, was determined through the identification of wildlife habitats on the site and their ability to support special-status wildlife species known to occur in the area.

Impact Analysis

The Point Reyes Peninsula has been designated as critical habitat for the federally-listed (as threatened) California red-legged frog. Since the nearest breeding areas for this species are a stock pond located 2,000 feet to the northwest and a marsh located one-half mile south, there will be no anticipated impacts to breeding habitat. The freestall barn expansion area is located at the edge of the potential upland migration habitat for the frog, as defined by a 300-foot setback zone from Kehoe Creek. Given the highly disturbed nature of the ground around the barn, this

area does not represent suitable migration habitat for the frog. Therefore, construction of the barn additions would have a less-than-significant impact upon habitat of the red-legged frog.

The fill slopes for the new manure pond are located approximately 70 feet from the ephemeral stream, and much of the proposed manure pond lies within the 300-foot setback zone of the stream which is considered dispersal habitat the frog. Due to the potential impacts to frogs which may use this area as a movement corridor, mitigation measures will be implemented to avoid such impacts. These include conducting pre-construction monitoring prior to grading at the manure pond site, as well as daily inspections of the work site.

The improvements to the manure management system will result in lower risk of water quality impacts in Kehoe Creek. This will have a beneficial impact to the red-legged frog, particularly in the downstream breeding area of Kehoe Marsh.

The non-native grasslands of the manure pond site may provide habitat for ground nesting birds such as the western meadowlark and California horned lark. In addition, the horse barn may provide nesting habitat for barn swallows and black phoebe. These are all passerines (perching birds) that are protected under the Migratory Bird Treaty Act. Mitigation measures will be implemented in order to avoid impacts to any such birds which may establish nests in the grasslands of the new manure pond site or in the horse barn. These measures, which include preconstruction surveys for nesting birds, and avoidance of active nests during demolition, grading, and construction, would reduce potential impacts to less-than-significant levels.

- *Cumulative Impact:* Both the project and the McClure Dairy improvements would have a mix of beneficial and negative effects to special-status species, although the impacts associated with both projects would all be reduced to less-than-significant levels with incorporated measures. Thus there would be no cumulative impacts to special-status species.
- *Conclusion:* Impacts to special-status species would be less than significant under this alternative with the incorporation of measures to reduce the effects described above. Based on the above discussion of potential impacts to special-status species, there would be no long-term impairment to special-status species. The reduced pollutant loading to Kehoe Creek would have a long-term beneficial effect on the aquatic habitat of special-status species such as the California red-legged frog.

Soils

Methodology

The evaluation of potential impacts to soils was based on the proposed grading involved in the alternative, and proposed erosion control and slope stabilization measures to be included in the alternative.

Impact Analysis

The project would help control erosion in areas currently used year-round by cows. Marin County standards would be followed for compaction and constructing the earthen embankment to the east of the new calf barn addition, as well as the containment levees for the new manure holding pond. All slopes would conform to state and County standards. No earthwork or compaction problems are anticipated with the on-site soils. The County engineer has the option of requiring a geotechnical report for projects with over 5,000 cubic yards (cy) of engineered fill (earthwork estimates are the 3,400 cy for the barn expansion and 13,800 cy for the new manure pond). This report would be prepared and followed if required by the County.

To minimize ground disturbance, equipment and materials would be stored on existing disturbed areas, those areas to be directly impacted by construction, or immediately nearby. Topsoil salvage and replacement would be practiced in cut and fill areas. Finished grades would be spread with salvaged topsoil and reseeded to promote vegetative cover.

- *Cumulative Impact:* For both the project and the McClure Dairy improvements, erosion control measures would prevent significant erosion and sedimentation impacts. The restoration and revegetation programs planned for both projects would have a beneficial effect on soils. Thus there would be no cumulative impacts to soils.
- *Conclusion:* Impacts to soils would be less than significant under this alternative. Based on the above discussion of potential impacts to soils, there would be no long-term impairment to soils.

Topography

Methodology

The evaluation of the impact to topography was based on review of topographic changes reflected in project grading plans, and determining the significance of these terrain modifications in terms of location and proposed slope stabilization measures.

Impact Analysis

The earthwork required for the barn expansion and the new manure pond would alter the site topography of those areas. At the barn site, approximately 3,400 cy of soil and rock material would be removed from the small ridge on the west side of the barn and used as fill material on the east side of the barn to create larger level area adjacent to the new calf pens. This earthwork at the barn site would balance. The new manure pond would involve excavation of approximately 13,800 cy of material from the hillside and the reuse of that material to construct downslope containment levees for the pond. This earthwork would also balance at the pond site with no net import or export of materials required. No unique geologic or ground surface features would be altered.

- *Cumulative Impact:* Both the project and the McClure Dairy improvements would result in minor terrain alterations, but no significant impacts to topography would occur in either case. There would be no cumulative impact on topography.

- **Conclusion:** Impacts to topography would be less than significant under this alternative, because cut and fill earthwork quantities for both the barn expansion and the new manure pond would be balanced. Based on the above discussion of potential impacts to topography, there would be no long-term impairment to topography.

Cumulative Impact: The combined effects of the project and the McClure Dairy improvements would not result in a cumulative impact to natural resources.

Conclusion: Overall, impacts to natural resources are beneficial under this alternative. Expansion of the barn and restoration of the year-round pasture area would improve water quality by reducing the risk of nutrient and sediment loading to Kehoe Creek. The project incorporates measures to avoid or minimize construction-related impacts to natural resources. These include the implementation of erosion control measures during construction, and also pre-construction monitoring for special-status species such as the California red-legged frog and four species of birds which may nest at the project site, with avoidance measures to be taken as appropriate. Based on the above discussion of potential impacts to natural resources, there would be no long-term impairment to natural resources.

4.3.2 Impacts on Cultural Resources

Methodology

The evaluation of impacts to historic resources was based on the document *Ranching on the Point Reyes Peninsula* (PRNS, 1994), and correspondence from the State Office of Historic Preservation (SHPO), dated April 3, 1995, regarding the determination of eligibility for Point Reyes dairy ranches to be listed on the National Register of Historic Places. The findings and conclusions of these documents with respect to the Kehoe Dairy is summarized under 'Affected Environment' above.

With respect to impacts to prehistoric archaeological resources, the PRNS archaeological base map was consulted to identify any recorded archaeological sites in the vicinity of the project site. In addition, an intensive site survey of the Kehoe Dairy which was conducted by the PRNS Archaeologist in 2001 as part of the Archaeological Clearance Survey for the project.

Impact Analysis

The two remaining historic-era structures at the Kehoe Dairy - the workshop and the horse barn - do not retain the historic integrity required to be considered historically important in their own right. As such, the removal of the horse barn to make room for the western addition to the freestall barn would not, in and of itself, constitute a significant impact to historic resources. (Prior to demolition of the barn, a park preservation crew would salvage any materials that could be reused on other historic structures.)

However, the Kehoe Dairy is an important element in the cultural landscape of the Point Reyes Peninsula and will form an integral part of the rural historic landscape district proposed by PRNS. Although it has undergone numerous alterations over the years, and no longer resembles the original family dairy of the 1860s, it is important that any improvements be in keeping with the scale and appearance of the existing building complex. To that end, the planned additions to the freestall barn have been designed to be integrated into the existing barn, with use of similar building materials and complementary rooflines. The structural additions are both smaller than the existing barn and do not overwhelm its scale or visually diminish its importance. While the additions would be visible in certain views from Pierce Point Road, they would blend in visually with the existing dairy complex and would not appear incongruous to the setting. It is also important to consider that the barn is part of dynamic operating dairy, whose purpose from a cultural perspective is to maintain the value of the cultural landscape, and as such it is not required to remain frozen in time. Therefore, the proposed barn expansion would not have a significant impact on the cultural landscape.

The new manure holding pond would result in the disturbance of almost three acres of ground and would add a new element to the landscape. However, once vegetation is established on the banks and margins of the pond, it will be virtually indistinguishable from the surrounding grassland landscape. Moreover, the pond will be located about one-half mile east of Pierce Point Road and will also be elevated relative to the roadway, so its visibility will be greatly reduced. Therefore, the new manure pond would not have a significant impact on the cultural landscape.

No ethnic cultural values or religious or sacred uses currently occur within the project area. There are no known archaeological resources at the project site. If any archaeological material is found during demolition, grading, excavation, or construction, such activity would stop, and a qualified archaeologist would evaluate the find and make recommendations to minimize any impacts.

- *Cumulative Impact:* At both the Kehoe and the McClure dairies, there are no known cultural resource sites that would be affected by the planned improvements, and standard mitigations would be implemented if resources are found during grading and construction for each project. There would be no cumulatively significant impact to cultural resources.
- *Conclusion:* The horse barn that is proposed for removal has no historic integrity, and the proposed barn expansion and new manure pond would not substantially alter the cultural landscape of the Kehoe Dairy. Therefore, impacts to cultural resources would be less than significant under this alternative. Based on the above discussion of potential impacts to cultural resources, there would be no long-term impairment to cultural resources.

4.3.2 Impacts on Visual Quality

Methodology

The assessment of potential impacts to visual resources was based on comparison of the alternative with baseline visual conditions. Determinations of impact were made in consideration of the nature and magnitude of the visual changes proposed, and the visual quality and general visibility of the affected area.

Impact Analysis

The Kehoe Dairy, including the existing barn, is visible from various locations in the northern portion of PRNS. An overview of the entire dairy complex is available from Pierce Point Road on the higher elevations directly to the north of the dairy. From the south, the dairy complex is visible at a distance, but in the closer views the dairy is elevated relative to Pierce Point Road so many of the individual structures are not visible. The effect of the barn additions to scenic views would be minimal because the additions are relatively small in scale, they are designed to be structurally integrated into the original barn, and are constructed of similar materials to the original barn (e.g., corrugated metal roofs).

The new storage building to be constructed to the west of the western barn addition will be situated on relatively high ground. There are no structures between the planned storage building and Pierce Point Road for most of its length, with the main house located just west of the new storage building near its north end. As such, the new storage building will be largely visible to northbound travelers along Pierce Point Road. The overall visual effect will be minimized due to the relatively low profile of the building and the choice of monoslope roof (instead of pitched roof) to reduce the overall height and bulk of the building. The planned surface treatments of board-and-batten siding and the choice of rustic red paint color will result in a surface appearance similar to the old horse barn which is planned for removal from this location. The gently sloping monoslope roof, which will consist of corrugated metal, will be similar to the rooflines and textures of the existing freestall barn and barn additions. Thus, although the addition of the new storage building will be noticeable from the roadway, it will be aesthetically consistent with the existing buildings and will have a lowered profile to reduce its visual obtrusiveness. Thus the new building will be visually integrated into the overall dairy complex in a manner that minimizes impacts to visual quality.

The visual effect of the new manure pond will also be small given its location one-half mile east of Pierce Point Road and because of its elevated position relative to the roadway. Once the exposed banks of the pond are revegetated, it will almost appear as a natural element in the landscape, and certainly will not be incongruous with an agricultural setting. The restoration and revegetation of the year-round pasture area, which is located adjacent to Pierce Point Road, would have a beneficial effect on visual quality.

- *Cumulative Impact:* At the McClure Dairy, the addition of a large freestall barn would be a noticeable visual change, although this would not represent a significant impact to overall visual quality. The proposed project would result in minor visual alterations which likewise would not represent a significant impact to visual quality. Taken together, these projects would not result in cumulative impact to visual quality.

- *Conclusion:* Impacts to visual quality would be less than significant under this alternative. Based on the above discussion of potential impacts to visual quality, there would be no long-term impairment to visual quality.

4.3.4 Impacts on Human Health and Safety

Methodology

The evaluation of potential impacts to human health and safety was based on the conformance of the alternative with: public health regulations applicable to wastewater disposal; building codes and seismic safety requirements; regulations governing the handling, storage and disposal of hazardous materials; and other applicable laws and regulations.

Impact Analysis

The barn additions and the new manure pond would be constructed to comply with all applicable federal, state, and local requirements.

Because of the dairy's proximity to the San Andreas fault, there is a potential for strong ground shaking during a seismic event centered nearby. The barn additions would be constructed in conformance with the Uniform Building Code requirements for Seismic Zone 4. The new manure pond would be designed to industry standards.

The barn additions would be constructed with a steel post and beam frame with a corrugated metal roof. With a minimum of wood used in construction and the general absence of vegetation in the immediate area, the fire hazard associated with the barn additions would be low.

Any hazardous materials and waste, such as paint, oil, or veterinary supplies would continue to be properly stored in accordance with federal and state regulations and the *Point Reyes National Seashore Hazardous Waste Management Plan*. All hazardous wastes such as paint and oil would be disposed of in accordance with the *Hazardous Waste Management Plan*. Since, no major or unusual quantities of hazardous materials or explosives would be present on the project site during construction or when the improvements are completed, the likelihood of an explosive hazard is extremely remote and deemed insignificant.

- *Cumulative Impact:* Any potential impacts to health and safety at the project site or at the McClure Dairy site would be mitigated through compliance with applicable regulations and policies. There would be no cumulative impact on human health and safety.
- *Conclusion:* Impacts to human health would be less than significant under this alternative. There would be no long-term impact to human health and safety.

4.3.5 Noise Impacts

Methodology

The evaluation of potential noise impacts was based on a comparison of existing noise sources with new noise sources included in the alternative, and in consideration of the presence of sensitive noise receptors (i.e., park visitors and off-site residences) that would be affected by changes in noise levels.

Impact Analysis

The proposed project would result in periodic generation of noise associated with short-term construction activities. Equipment operation at the site and vehicles moving to and from the site would generate intermittent low levels of noise. Although ambient noise levels in the surrounding area are expected to increase during construction, this construction-related noise would represent a temporary increase of limited duration and is not considered a significant impact. In addition, all construction activity would be regulated by the County's Design Review and building permit process, and would be in compliance with standard County regulations controlling permitted hours of activity and permitted noise levels. Once completed, the operation of the barn additions and the new manure holding pond would not generate new noise. Therefore, the project would result in a less-than-significant noise impact.

- *Cumulative Impact:* The short-term construction noise levels associated with the project and the McClure Dairy improvements would be less than significant in both cases. Since the projects are two miles apart, the construction noise generated at each site would be too far apart to be additive. Thus there would be no cumulative noise impact.
- *Conclusion:* Noise impacts would be less than significant under this alternative. Based on the above discussion of potential noise impacts, there would be no long-term noise-related impairment.

4.3.6 Impacts on Public Facilities and Services

Methodology

The evaluation of potential impacts to public facilities and services was based on consideration of the increased demand for service involved in the alternative, and the likelihood that sufficient service capacity exists to accommodate the alternative.

Impact Analysis

Water Supply. Domestic water for the Kehoe Dairy is obtained from two on-site wells operated under permit from the County of Marin Environmental Health Services Division. A large spring-fed stock pond which supplies water for the dairy operation has ample capacity to provide increased demand for water from the barn additions. No other public or private entities are

dependent upon these sources for water supply. No impacts to other water sources would occur as a result of this project.

- *Cumulative Impact:* Increased water supplies required for the enhancements to the McClure Dairy manure management system would be drawn from a separate watershed and would not affect the Kehoe Dairy water supply. Since the no action alternative would involve no increase in water consumption, there would be no cumulative impact on water supply.
- *Conclusion:* No impacts to public water supply would occur under this alternative. There would be no long-term impact to public water supplies.

Roadways and Public Transportation. The project would result in a short-term increase in construction-related use of Pierce Point Road. Since there would be no increase in herd size, it is unlikely that the number of feed trucks that currently serve the dairy will increase. Overall, traffic is primarily generated by recreational users. No public or NPS transportation service is available in the area. Therefore, this project would have a less than significant impact on traffic and public transportation facilities.

- *Cumulative Impact:* Both the project and the McClure Dairy improvements would result in short-term increases in traffic during construction. Even if the projects were constructed simultaneously, the combined traffic generation would not result in a cumulative impact to Pierce Point Road.
- *Conclusion:* Impacts to roadways and public transportation would be less than significant under this alternative. There would be no long-term impact to roadways and public transportation.

Energy Consumption. Energy use is not anticipated to change significantly as a result of the project. The new energy uses associated with the barn additions would consist only of electric lighting. Wastewater intakes and discharges at the new manure holding pond would both occur by gravity and would not require pumps. Although, the increase in the number of sheltered cows would increase manure volumes that would need to be pumped, this increase would not represent a significant consumption of energy.

- *Cumulative Impact:* The new facilities at the project and the McClure dairy would each result in a very minor increase in the overall demand for energy. Thus there would be no cumulative impact to energy resources.
- *Conclusion:* Impacts to energy consumption would be less than significant under this alternative. There would be no long-term impact to energy resources.

Police Protection. NPS is the primary law enforcement agency in the area with back up by the Marin County Sheriff's Department. No increase in service by NPS or the Sheriff's Department is anticipated as a result of this project.

- *Cumulative Impact:* The improvements at the Kehoe and McClure dairies may each result in a very minor increase in demand for police protection. The combined increase in demand would not result in a cumulative impact to police protection services.
- *Conclusion:* Impacts to police protection services would be less than significant under this alternative. There would be no long-term impact to police protection services.

Fire Protection. The new barn additions and storage building would represent a minor increase in the responsibilities of the PRNS and the Marin County Fire Departments.

- *Cumulative Impact:* The new buildings and additions constructed at the Kehoe and McClure dairies would each result in a minor increase in demand for fire protection service. Taken together, this demand would not result in a cumulative impact to fire protection services.
- *Conclusion:* Impacts to fire protection services would be less than significant under this alternative. There would be no long-term impact to fire protection services.

Schools. No additional dwellings are proposed at the dairy. Therefore, no change in enrollment in local schools would occur.

- *Cumulative Impact:* The project would result in no increased school enrollment, and the one new dwelling added to the McClure Dairy would result in a minimal increase in school enrollment. There would be no cumulative impact on schools.
- *Conclusion:* No impacts to schools would occur under this alternative. There would be no long-term impact to schools.

Other Governmental Services. No new or increased levels of governmental services are anticipated to be required as a result of the project.

- *Cumulative Impact:* Since neither the project nor the McClure Dairy are anticipated to result in increased demand for governmental services, there would be no cumulative impact on governmental services.
- *Conclusion:* No impacts to governmental services would occur under this alternative. There would be no long-term impact to governmental services.

Utilities. PG&E has adequate facilities in the project area to serve the new barn additions and storage building. Only minor increases in power use are anticipated.

- *Cumulative Impact:* Since neither the project nor the McClure Dairy improvements would result in a significant increase in demand for utilities service, there would be no cumulative impact on utilities service.
- *Conclusion:* Impacts to utilities would be less than significant under this alternative. There would be no long-term impact to utilities.

Cumulative Impact: Since neither the project nor the McClure Dairy improvements would result in a significant increase in demand for public facilities and services, there would be no cumulative impact on public facilities and services.

Conclusion: Impacts to public facilities and services including water supply, roadways and public transportation, energy consumption, fire and police protection, schools, other governmental services, and utilities would be less than significant under this alternative. There would be no long-term impact to public services and utilities.

4.3.7 Impacts on Local Economy

The proposed barn additions and new manure pond are likely to have a positive effect on the local economy. Because the barn would alleviate stress on the dairy cows and reduce feed waste or loss, dairy profitability and competitiveness are likely to increase.

Cumulative Impact: Both the project and the McClure Dairy improvements would have a beneficial effect on the dairy industry and the local economy generally. Thus the cumulative effect on the local economy would be beneficial.

Conclusion: Impacts to the local economy would be beneficial under this alternative. There would be no long-term impact to the local economy.

4.4 Identification of Environmentally Preferred Alternative

A comparison of project alternatives is presented in Table 1. Alternative 2 has important site-specific benefits to the water quality and aquatic habitats in Kehoe Creek, and is also beneficial to the local economy. Alternative 2 would have minimal or no impact on vegetation, air quality, soils, topography, cultural resources, visual quality, human health and safety, noise, and public facilities and services. While Alternative 2 would result in potential impacts to special-status wildlife species, these impacts can be fully mitigated by incorporated measures. Although these potential impacts would be avoided altogether under Alternative 1 (no action), the ongoing water quality impacts to Kehoe Creek, and consequent impacts to aquatic habitats, would continue unabated under Alternative 1. For these reasons, Alternative 1 is not preferred from an environmental perspective. Alternative 2 is the preferred alternative because it results in important benefits to water quality and aquatic wildlife habitat while having otherwise minimal or readily mitigable impacts.

Table 1: Comparison of Alternatives

Project Features/ Environmental Factors	Alternative 1: No Action	Alternative 2: Preferred
Project Features		
Barn Expansion (sq. ft.)	N/A	23,600 sq. ft.
New Manure Pond (acres)	N/A	1.3 acres
Natural Resources		
Vegetation	Some pasture restoration likely to occur.	Temporary removal of 2.9 acres of non-native grassland. Permanent removal of 1.3-acres of grassland.
Water Resources	Continued nutrient and sediment loading to Kehoe Creek, with risk of water quality impacts.	Reduction in nutrient and sediment loading to Kehoe Creek, and reduced risk of water quality impacts.
Air Quality	No change.	No new impact.
Wildlife	Potential for negative water quality impacts to aquatic habitat of Kehoe Creek.	Improvement from reduced water quality impacts, and from restoration and revegetation of year-round pasture area.
Special-Status Species	Water quality impacts could degrade California red-legged frog breeding habitat in downstream reaches of Kehoe Creek.	Potential “take” of California red-legged frog in upland migration habitat. Potential “take” of active birds nests. Preconstruction surveys and ongoing monitoring will allow impacts to be avoided.
Soils	No change. Continued erosion in year-round pasture area.	Reduction in erosion in year-round pasture area. Erosion control measures to be implemented during grading and construction.
Topography	No change.	Earthwork balanced at each work site.
Cultural Resources	No change.	No National Register Eligible resources would be adversely affected. The project elements would not substantially alter the cultural landscape.
Visual Quality	No change.	Project elements would not have a negative effect on visual quality.
Human Health and Safety	No change.	Would comply with applicable federal, state, and local requirements. Negligible potential impact.
Noise	No change.	No new impact.

Table 1: Comparison of Alternatives (Cont'd)

Project Features/ Environmental Factors	Alternative 1: No Action	Alternative 2: Preferred
Public Services and Facilities		
Water Supply	No change.	No public supplies. Existing supplies are adequate.
Roadways and Public Transportation	No change.	Temporary, construction-related traffic only.
Energy Consumption	No change.	Minimal change.
Fire Protection	No change.	Less-than-significant increase.
Police Protection	No change.	Less-than-significant increase.
Schools	No change.	No new enrollment. No impact.
Other Government Services	No change.	None anticipated.
Utilities	No change.	Service extension not anticipated.
Local Economy	Decrease in profitability.	Increase in dairy viability and profitability.

5. Summary of Impacts and Incorporated Measures

Park: Point Reyes National Seashore

Project: Kehoe Dairy Freestall Barn Additions and New Manure Holding Pond

<i>Impact To</i>	<i>Incorporated Measure (and Responsibility)</i>
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1. Natural Resources

Vegetation	Areas disturbed during construction are to be revegetated with native grasses to be determined by PRNS (Kehoe Dairy). Restoration and revegetation of currently degraded pasture is to occur after the additions to the freestall barn are completed and the pasture is no longer needed for winter use by cows (Kehoe Dairy).
Water Resources	Straw bales, silt fencing and other erosion and sediment control measures specified in the project Erosion and Sediment Control Plan are to be installed. The site is to be monitored during construction and appropriate measures are to be taken to ensure that Kehoe Creek and the ephemeral stream are not contaminated with sediment and construction debris (Kehoe Dairy).
Air Quality	Construction dust is to be monitored and minimized by watering of the exposed soils and by covering trucks leaving the area with demolition debris (Kehoe Dairy).
Wildlife	PRNS staff will monitor species before, during, and after construction to ensure that disturbance is minimal (PRNS in conjunction with Kehoe Dairy).
Special-Status Species	<u>California Red-legged Frog</u> To avoid potential “take” of individual California red-legged frogs that may move into the non-native grassland in the area of the new manure pond site, the following measures are incorporated: <ul style="list-style-type: none">• Pre-construction surveys of the non-native grassland are to be conducted prior to grading for the new manure pond. Surveys will consist of one daytime survey to be conducted on the same day as grading commences. A qualified biologist will walk the area looking for individual red-legged frogs. If an individual is found, it should be able to leave of its own volition. Ground breaking

may commence after the individual has left. If no individuals are found, ground breaking may commence immediately.

- During grading and construction at the new manure pond site, a walk through will be conducted each morning to search for individuals, with the above procedure followed if an individual is found (Kehoe Dairy in conjunction with PRNS).

Nesting Birds

To avoid potential “take” of nesting passerines (perching birds) at the horse barn or at the grasslands of the manure pond site, the following measures are incorporated:

Alternative Mitigation A. Demolition of the horse barn, and grading within the grassland area of the project site is to be conducted outside the nesting season, which occurs between February 1 and August 15, approximately.

Alternative Mitigation B. If demolition and grading in the potential nesting areas is not feasible outside of the nesting season, a nesting bird survey will be performed by a qualified biologist prior to grading or demolition. This pre-construction survey will be conducted no more than one week prior to planned demolition and/or grading activity.

- If nesting birds with eggs or young are observed during the pre-construction surveys, grading and/or demolition in the affected project area (e.g., horse barn or grasslands at the manure pond site) will not commence until after the young have fledged. (In the case of swallows in the eaves of the horse barn, early removal of the nesting structure in February or early March, while the nest is being built but before eggs are laid, would also be sufficient to prevent “take” of individuals.)
- If no nesting birds are observed, no further action is required, and demolition, grading, and construction may proceed, provided that it commences within one week of the survey to prevent “take” of individual birds that may have begun nesting after the survey (Kehoe Dairy in conjunction with PRNS).

Soils

Soils exposed by grading or heavy equipment use shall be restored and revegetated as soon as practicable after completion of grading and/or construction in the area (Kehoe Dairy).

Topography	Finished cut and fill slopes adjacent to the freestall barn are to be inspected by the project engineer prior to construction of improvements (Kehoe Dairy).
2. Cultural Resources	If any archaeological resources are discovered during demolition, grading, excavation, or construction, all such activity in the vicinity of the find will stop, and the area will be evaluated by the NPS Regional Archaeologist (Kehoe Dairy in conjunction with PRNS).
3. Visual Quality	Revegetation of new manure pond area is to commence immediately following completion of pond construction (Kehoe Dairy).
4. Health and Safety	N/A
5. Noise	Demolition, excavation, grading, and construction is to occur on weekdays only between 7:00 a.m. and 7:00 p.m. (Kehoe Dairy).
6. Public Services	N/A
7. Local Economy	N/A

6. Consultation and Coordination

The U.S. Fish and Wildlife Service was consulted regarding special-status species, including threatened and endangered species.

Marin County Comprehensive Planning Department will conduct design review of the project.

Others consulted on the project include:

National Park Service

Project Manager: Mark Homrighausen, Range Conservationist, Point Reyes National Seashore

Mark Rudo, Archaeologist, Pacific Great Basin Support Office, National Park Service

Gordon White, Historical Architect, Point Reyes National Seashore

Technical Assistance

Bert Verrips, AICP, Environmental Consulting Services

Erickson Engineering

Wildlife Research Associates

7. Preparers

Bert Verrips, AICP, Environmental Consulting Services, Oakland, CA

Bert Verrips has over 20 years experience in the preparation of environmental documents under NEPA and CEQA. He is a member of the Association of Environmental Professionals (AEP), the American Planning Association (APA), and the American Institute of Certified Planners (AICP).

Erickson Engineering, Valley Ford, CA

Lee Erickson, Ph.D., is a licensed civil and agricultural engineer. Erickson Engineering's expertise includes civil engineering from dams, water rights, drainage, erosion control, rural septic systems, roads, water development, vineyard terraces, and dairy waste management.

8. References

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Wildlife Research Associates. January 2003. *Biological Evaluation: Kehoe Dairy Improvement Project, Inverness, California.*

Appendix A

Project Location Map

Appendix B

Project Site Plans and Profiles

Appendix C

Engineering Report (Grading Permit Application)

Appendix D

Biological Survey Report

Appendix E

Other Projects Considered in Cumulative Analysis

Other Projects Considered in Cumulative Analysis

1. The proposed McClure Dairy Barn and Resource Enhancement Project. Located in the North District of Point Reyes NS, the project would construct an 81,000 square foot loafing barn and develop manure holding ponds to enhance water quality. The project would enhance the viability of the ranch and exclusionary fencing will increase natural resource protection in the project area. One housing unit will be added to the complex.
2. The Pacific Coast Learning Center has been initiated in existing buildings in Olema Valley at the former Hagmaier Ranch. The site is used for office space, housing, and fire fighting and maintenance equipment. No new construction has occurred and park and visitor use has occurred on the site for over 20 years.
3. Sewage systems upgrades have been conducted at one residential unit on NPS lands and three new systems in residential units are planned for this fiscal year. The three units are all located in upper Olema Valley. The NPS headquarters buildings are receiving a new sewage system.
4. The NPS has initiated several riparian protection projects in Olema Valley for coho salmon and steelhead restoration. These projects include riparian exclusionary fencing on Blueline Creek, Giacomini Creek, Cheda Creek, and other tributaries.
5. Several cultural resource preservation projects have been conducted in the Olema Valley within the last five years. The historic bunkhouse at Truttman Ranch, northern Olema Valley, has been reroofed and is slated as a project for restoration in early 2002. The Giacomini Ranch house, in southern Olema Valley, and main barn have received preservation treatments to ensure long-term preservation. In 1997, the main barn at the Wilkins Ranch was stabilized. The main barn at Truttman will be stabilized in FY2001.
6. The MCI building in the North District of Point Reyes National Seashore is receiving rehabilitation and will provide office space for district rangers. Ranger staff will be moved from existing office. Fire staff will also use the office space. No additional construction will occur.
7. The Point Reyes Hostel has developed a proposal for upgrading housing, a new sewage system, and for providing additional overnight lodging. The proposal will increase lodging capability from 44-52 persons. Housing for staff will increase from 2 to 4 units.
8. The Red Barn at park headquarters is being rehabilitated for curatorial storage and classroom space. There will also be office space for existing Marine Sanctuary staff and park staff.

Appendix F

Glossary of Terms

Glossary of Terms Used in Environmental Analysis

Affected environment: The existing biological, physical, social, and economic conditions of an area that are subject to change, both directly and indirectly, as a result of a proposed human action.

Air Quality: A measure of health- and visibility-related characteristics of air.

Alternatives: A reasonable range of options that can achieve an agency's objectives.

Beneficial Impact: When the proposed action would improve the environment.

Cultural landscape: An area with both cultural and natural elements that is associated with an historic event, activity, or person, or that exhibits other cultural or aesthetic values.

Cultural resources: Properties such as landscapes or districts, sites, buildings, structures, objects, or cultural practices that are usually greater than 50 years old and possess architectural, historic, scientific, or other technical value.

Cumulative impact: Effects on the environment that result from the incremental impacts of an action when added to other past, present, or reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Geologic hazards: Natural geologic processes that do or could present a threat to humans or developed areas.

Enhancement: Activities conducted to improve the quality or biological function of an impacted natural resource.

Hazardous material: A substance or combination of substances that may cause or significantly contribute to an increase in mortality or in serious, irreversible, or incapacitating illness, or that pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hydric soils: Soils characterized by an abundance of moisture that periodically produce anaerobic conditions. These soils are typically found in wetland habitats.

Hydrology: Distribution and circulation of water on the surface of the land, in the soil, and in the atmosphere.

Hydrophytic plant: Any plant growing in water or in a substrate that has an abundance of moisture. Hydrophytic plants are typically found in wetland habitats.

Impacts: Effects, both beneficial and adverse, of an action on the environment. Direct impacts are those occurring at the same time and place as the action itself. Indirect impacts occur later in time or are further removed in distance from the action, yet are reasonably foreseeable.

Long-term impact: Activities that would harm the integrity of resources or values.

Mitigation: An activity designed to avoid, minimize, rectify, reduce, or compensate for the severity of, or eliminate impacts from, the proposed project. A mitigation measure should be a solution to an identified problem.

Nutrient loading: Percentage of nutrients associated with animal waste reaching an identified waterbody.

Natural resources: Features that include plants and animals, water, air, soils, topographic features, and geologic features.

No action alternative: An alternative that continues current management direction. Action alternatives are compared against the no action alternative.

Restoration: Management actions or work to remove impacts to natural resources, to restore natural processes, and to return a site to natural conditions.

Sediment: A particle of soil or rock that is transported and/or deposited by surface runoff or a stream.

Special-status species: Species of plants and animals that receive special protection under state and federal laws.

Threatened and endangered species: Species of plants and animals that have been formally listed as “threatened” or “endangered” under the federal Endangered Species Act or corresponding state statutes, and receive protection under those laws. These species are included within the broader category of special-status species.

Wetland: Areas that are inundated by surface or groundwater with a frequency sufficient to support, under normal circumstances, vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.