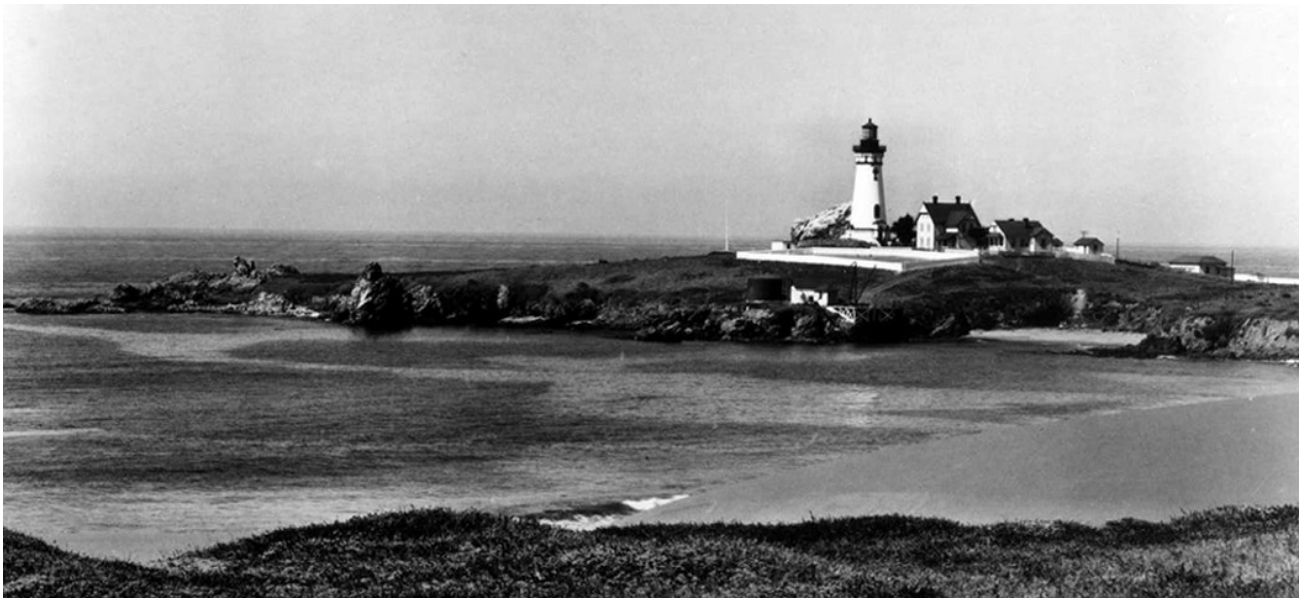

PIEDRAS BLANCAS LIGHT STATION

MANAGEMENT PLAN
and
ENVIRONMENTAL ASSESSMENT

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Executive Summary

This Management Plan establishes the vision and direction that will guide the Bureau of Land Management (BLM) and its partners in the protection, restoration, and management of the Piedras Blancas Light Station for approximately 15 years into the future. In BLM parlance, this document is called an "activity-level" plan. It identifies a preferred alternative, along with four additional alternatives. It identifies corrective actions and restoration goals, while providing guidance for resource protection and managed use by the visiting public. It will also serve as design guidance to configure the site to its period of greatest historic significance. The management objective(s) for the Light Station are embodied in the following mission statement:

"Manage and restore the Piedras Blancas Light Station to a period in its history when the site played a significant role in the protection of central California maritime activities. In addition, preserve and protect the natural, historical, and cultural resources of the site while providing opportunities for compatible scientific, cultural, social, and interpretive activities for the benefit of present and future generations".

The Piedras Blancas Light Station as it appeared in October 2005....an oblique aerial view looking east.

The Piedras Blancas Light Station is located approximately 6 miles north of the village of San Simeon on California's Central Coast. The 19-acre Light Station parcel is situated on a point that was once part of the Piedra Blanca Rancho, now (largely) owned by the Hearst Corporation. The jurisdiction of the parcel transferred to the BLM in 2001 after several decades of jurisdiction under the Coast Guard. The parcel is occupied by a "truncated" lighthouse (1875); a fog signal building (1906); a fuel/oil house (1907); two residential duplex housing units (1960); and a former Navy "Mobile Instrumentation Station (1960) which now serves as administrative space, shops, and storage; a garage/boathouse (1991); tank storage house previously used as pump house (1935); and a remnant fuel/storage building (1876). Three of the structures, the lighthouse, fog signal building and fuel/oil house are listed on the National Register of Historic Places. Current access to the Light Station is off California's State Highway 1, through a locked gate via a westbound improved ¼ mile long access road. There is 1/3 of a mile of paved access roads inside the reservation that lead to residential, administrative spaces and the light house. Shortly after the return of the parcel to BLM jurisdiction, it became apparent that there is intense desire by the public to visit this old Light Station. In 2002 two public meetings were held in Cambria, California to discuss the future of the Light Station and to document the public's concerns and wishes for the

future of Piedras Blancas. As a result of those meetings, the following issues were identified and incorporated into a management "framework" for the site:

- Restore the Piedras Blancas Light Station to its period of greatest historic significance (1875 to 1940).
- Manage limited public access for tours and educational purposes.
- Continue (site dependent) near shore and marine research.

This Plan addresses the above issues, along with additional issues identified by BLM. The main features of the Preferred Alternative in the Plan are:

1. Restoration/Reconstruction of Historic Structures
   - restore the Piedras Blancas Light Station to its period of greatest historic significance (1875 to 1940), involving the lighthouse, fog signal building, fuel/oil building, watchroom, head keeper's residence, keeper's Victorian triplex, laundry building, tank storage house, and possibly the barn, fuel storage building, and wharf.

2. Provide for Public Visitation at the Light Station
   - develop a tour system in conjunction with California State Department of Parks & Recreation and the National Geographic Theater to interpret the historic, cultural, and natural features of the Light Station.
   - Assist the Piedras Blancas Light Station Association with fund raising efforts and concessions.
   - construct a loop trail around the Light Station for use by the public during site visits.

3. Acquire/Develop Easements for Off-Site Light Station Facilities
   - acquire adequate, legal administrative access rights and controllable public access rights to the Light Station. Reconstruct or re-route the existing access road with emphasis on safety, environmental sensitivity, and the historic access route.
   - acquire an adequate water supply easement. Improve or reconstruct existing water facilities for better reliability and compliance with potable water requirements.

4. Improve Infrastructure and Administrative Facilities
   - improve or replace administration building, electrical system, phone facilities, and on-site road net.
   - bury existing powerline.

5. Provide for Public Benefit Communications
   - maintain the lighthouse light as a Federal Aid to Navigation through the existing right-of-way to the Coast Guard.
   - permit the continued use of the electronic communication site at the Light Station for public benefit agencies (no commercial use) within existing capacity. Remove tower and facility should it become obsolete.

6. Use the Light Station as an Interpretive Gateway for the Calif. Coastal National Monument.
   - designate the Light Station as an interpretive node for the National Monument. Incorporate information on the National Monument into the public interpretive program.

7. Allow for Biological Research
   - continue ongoing use (by BLM permit) of the Light Station for structured, site-dependent research (whale surveys, tidepools, etc.)

8. Biological Restoration
   - Restore native vegetation at the Light Station. Eradicate iceplant and eradicate or control other weedy exotics.

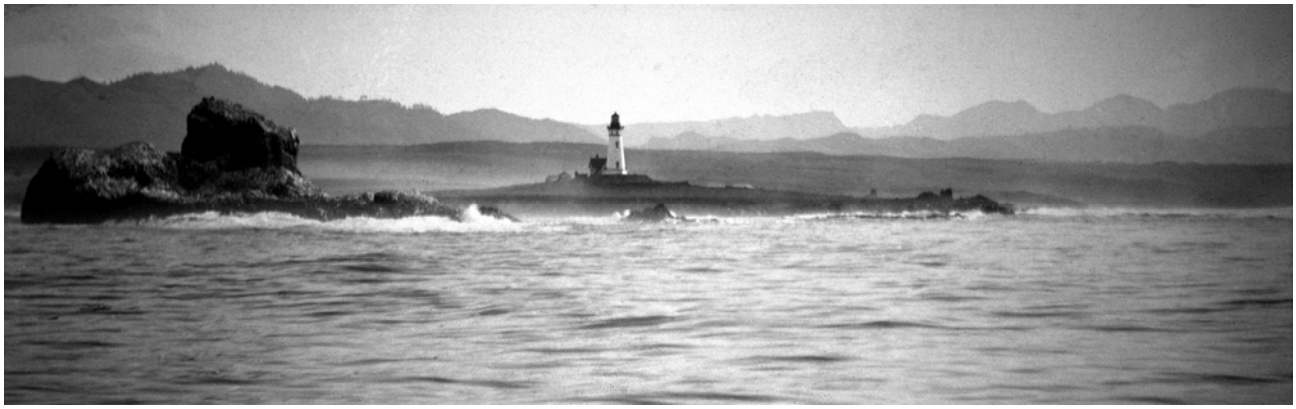
9. Protect Cultural Resources
   - continue inventory of historic and prehistoric resources, and manage the Light Station for the long term protection of these important resources.

SUMMARY OF PROPOSED ACTIONS BY ALTERNATIVE

PROPOSED ACTION	PREFERRED ALTERNATIVE	ALTERNATIVE #1 NO ACTION	ALTERNATIVE #2 MINIMAL STABILIZATION
Lighthouse	Stabilize and restore lighthouse to its original appearance.	Do not stabilize or restore lighthouse.	Stabilize lighthouse and repair selected features. Do not restore top of lighthouse.
Fog Signal Building	Stabilize and restore fog signal building to original appearance.	Do not stabilize or restore fog signal building.	Stabilize fog signal building and repair selected features.
Fuel/Oil House	Stabilize and restore fuel/oil house to its original appearance.	Do not stabilize or restore fuel/oil house.	Stabilize fuel/oil house and repair selected features.
Tank Storage Building	Stabilize and restore the tank storage building's exterior appearance. Continue its use as water treatment/storage facility.	Do not stabilize or restore tank storage building. Continue its use as water treatment/storage facility.	Stabilize tank storage building and repair selected features. Continue its use as water treatment/storage facility.
Fuel & Storage Building	Reconstruct this missing structure. Adapt for use as gift shop/PBLSA office.	Do not reconstruct the fuel & storage building.	Stabilize fuel & storage building and repair selected features.
Laundry	Reconstruct and adapt for use as elec. power center.	Do not reconstruct laundry.	same as Alternative #1.
Watchroom	Reconstruct watchroom.	Do not reconstruct watchroom.	same as Alternative #1.
Keeper's Triplex	Reconstruct keeper's triplex.	Do not reconstruct keeper's triplex.	same as Alternative #1.
Head Keeper's Residence	Reconstruct head keeper's residence	Do not reconstruct the head keeper's residence.	same as Alternative #1.
Barn	Reconstruct and use for Interpretation, admin. offices, and/or housing.	Do not reconstruct the barn.	same as Alternative #1.
Wharf and Warehouse	Do not reconstruct the wharf.	same as Preferred Alternative.	same as Preferred Alternative.
Water Tower, Rain Catchment, and Water Storage System	Do not reconstruct these features.	same as Preferred Alternative.	same as Preferred Alternative.
Historic Landscaping	Restore selected elements of the historic landscaping. Restore windbreak	Do not restore any historic landscaping.	Maintain present windbreak, but do not restore any historic landscaping.
Tours & Public Access	Limit public visitation to scheduled, docent-led tours in conjunction with CA State Parks and Nat'l Geographic Theater. Estimate 25,000 ± visitors/year.	No public tours.	same as Preferred Alternative, but limit visitor use to 3,000 visitors/year and no drive-in visitation.
Public Use Guidelines	Continue use of BLM rules dated 4/15/2002.	same as Preferred Alternative.	same as Preferred Alternative.
Interpretation & Education	Develop a full public interpretation/education program for PBLS history and resources. Incorporate volunteers and partnerships with other organizations.	No public interpretation or education.	same as Preferred Alternative.
Interpretation of CA Coastal Natl. Monument	Incorporate information on the Natl. Monument into public tours and interpretive program.	No public interpretation or education of the Natl. Monument.	same as Preferred Alternative.
Merchandising	Make full use of the PBLSA for fund raising, sales and management of special events.	Limited on-site sales. PBLSA allowed to conduct limited number of special events.	same as Preferred Alternative.
Land Tenure	Retain the Light Station in U.S. ownership under BLM jurisdiction.	same as Preferred Alternative.	same as Preferred Alternative.
Access Easement	Acquire access rights for a safe access road to PBLS.	Use existing access road and easement.	Use existing access road. Acquire new easement on existing road.
Water Supply Easement	Acquire water supply conveyance rights on adjacent lands. Acquire appropriative water right if applicable.	Use existing water supply line and easement.	same as Preferred Alternative.
Utility Easements	Provide for reliable utility service at PBLS. Consider relocating existing elec. & phone lines underground.	Use existing above-ground utility lines.	same as Alternative #1.

PROPOSED ACTION	PREFERRED ALTERNATIVE	ALTERNATIVE #1 NO ACTION	ALTERNATIVE #2 MINIMAL STABILIZATION
Communications Facility	Maintain existing rights-of-way for public benefit communications. Consider new applications on a case-by-case basis.	Maintain existing rights-of-way for public benefit communications. Do not consider any new applications.	same as Preferred Alternative.
Aid to Navigation (lighthouse light)	Maintain existing right-of-way for lighthouse light and continue operation of the light.	same as Preferred Alternative	same as Preferred Alternative.
Short Term Permits	Consider issuance of short-term permits for use of PBLS on a case-by-case basis.	same as Preferred Alternative	same as Preferred Alternative.
Administrative Facility	Remove existing admin. facility & boat house. Replace with new on-site facilities in reconstructed historic buildings.	Use and repair existing admin. facility & boat house.	same as Alternative #1.
Housing	Remove existing housing units. Integrate housing space into new structures.	Use and repair existing housing units.	same as Alternative #1.
Parking/Interior Circulation	Upgrade existing roads & parking areas for safety and tour buses.	Use and repair existing roads and parking areas.	same as Alternative #1.
Trail Development	Install new ADA-compliant interpretive trail within the interior of PBLS.	No interpretive trail would be built.	same as Alternative #1.
Sanitation	Maintain current sewage and trash disposal systems. Upgrade as needed.	Use existing sewage and trash disposal systems.	Use existing sewage and trash disposal systems. New public restrooms to use modern waste disposal technology.
Facilities Maintenance	Design & restore features and structures with emphasis on durability and low maintenance.	Repair existing features and structures as needed, with emphasis on cost.	Repair existing features and structures as needed, with emphasis on durability.
Site Security	Develop law enforcement agreement(s) with local law enforcement agencies.	same as Preferred Alternative.	same as Preferred Alternative.
Biological/Geophysical Research	Authorize bio/geo research at PBLS, as ongoing PBLS operations allow.	same as Preferred Alternative.	same as Preferred Alternative.
Native Plant/Animal Protection	Protect important wildlife use areas and native vegetation at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Native Plant Restoration	Remove iceplant and restore native plant communities at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Sensitive Plant Species	Protect and propagate sensitive plant species at PBLS, including compact cobwebby thistle.	same as Preferred Alternative.	same as Preferred Alternative.
Cultural Resource Management	Identify, document, assess, preserve, protect, and monitor cultural resources at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Cultural Collections	Provide professional-level protection & management of cultural collections from PBLS or acquired from. off-site.	Minimize the collection of artifacts.	same as Preferred Alternative.
Shoreline Erosion	Prevent or minimize accelerated shoreline erosion at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Soil Conservation	Avoid wind erosion of soils at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Visual Resource Management	Make preservation of the historic & natural viewshed an important factor in all actions at PBLS.	same as Preferred Alternative.	same as Preferred Alternative.
Implementation Schedule	Implement actions as funding & staffing allow.	same as Preferred Alternative.	same as Preferred Alternative.

PART I INTRODUCTION



PART I. INTRODUCTION

A. Location and Setting

The Piedras Blancas Light Station is located approximately 1/2 mile southwest of State Highway 1, approximately six miles north of the village of San Simeon, in San Luis Obispo County, on California's Central Coast. Los Angeles is approximately four hours to the south via automobile, and the San Francisco Bay area is approximately five hours to the north. Hearst Castle State Historic Monument is located six miles to the south of the Light Station. The Light Station is situated on a 19.9 acre parcel at the end of a short peninsula that was once part of Rancho Piedra Blanca, a former Mexican land grant (now largely owned by the Hearst Corporation). There is approximately 1/2 mile of Pacific Ocean frontage that wraps around Point Piedras Blancas on its north, south, and west sides. The legal description of the parcel is: U.S. Lighthouse Reserve in Township 26 South, Range 6 East, Mount Diablo Meridian.

B. Relationship to Other Plans and Specific Statutes

1. BLM Planning System

BLM develops guidelines for the future management of the Piedras Blancas Light Station through the use of its three-tiered planning process.

Tier #1 - National laws, policies, and directives set general philosophy and priorities and establish regulatory guidelines for management options.

Tier #2 – BLM Resource Management Plans (RMP) are developed for large, regional areas and provide general land use decisions on the management of BLM-administered lands and resources in a region. The management of BLM lands in San Luis Obispo County is guided by BLM's Caliente RMP, dated December 1996. This RMP was accompanied by an Environmental Impact Statement and an extensive public review process. The Record of Decision for this RMP was signed on May 5, 1997 by the BLM California State Director. The Record of Decision adopted the RMP. The Piedras Blancas Light Station falls within the Coast Management Area of this RMP. The RMP has been reviewed to determine if the Piedras Blancas Management Plan conforms to management guidelines, as required by 43 CFR 1610.5-3(a). The RMP states the following regarding management objectives for the Coast Management Area: "Integrate management objectives with those of local county governments, coastal commission, state agencies, and other Federal agencies to contribute to regional conservation efforts" and "Increase cooperation with management partners to integrate the isolated parcels with other natural resource and open space management programs". The RMP does not specifically address the Piedras Blancas site (since it was under the jurisdiction of the Coast Guard at the time of RMP completion) or restoration and site manipulation/development issues, however, the Piedras Blancas Management Plan would conform to the Caliente RMP. A future amendment to the Caliente RMP will specifically address the Piedras Blancas Light Station and incorporate it into this RMP.

Tier #3 – BLM Activity Plans describe the site-specific steps that would be taken to meet established management objectives. Activity plans such as this one must be consistent with national policies and laws, and must conform with previous planning efforts, in this case, the Caliente RMP. This Piedras Blancas Management Plan is an activity-level planning document. Activity plans constitute the final, although not static, tier in BLM's planning strategy.

2. Other Plans

a. The California Coastal National Monument RMP

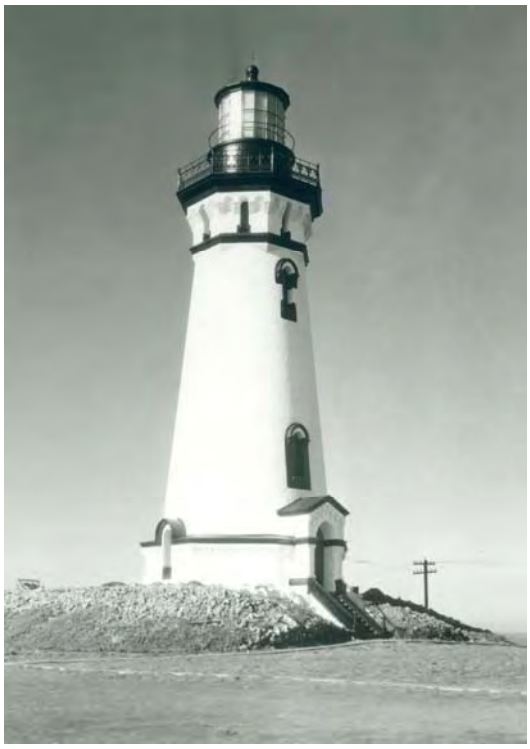
The BLM has recently released the California Coastal National Monument Resource Management Plan. It describes the relationship between the Monument and Piedras Blancas in detail. The Piedras Blancas Light Station is designated as a Gateway for the California Coastal National Monument in the Monument RMP. A Gateway in this context is described as an interpretive "node" that would offer education and information programs related to the Monument, as well as provide the public with opportunities to view the Monument at key locations.

b. Monterey Bay National Marine Sanctuary Management Plan:

The MBNMS Management Plan defines management strategies, goals and objectives for managing the waters around Piedras Blancas (below mean high tide) for their rich marine ecosystems and diversity. The Piedras Blancas Light Station lies adjacent to the Monterey Bay National Marine Sanctuary (MBNMS). The Sanctuary administers ocean resources located below the mean high tide level along the Central Coast from Monterey, California in the north and to Cambria, California, to the south. BLM collaborates with the Sanctuary for mutual information exchange, and joint educational and outreach opportunities. In addition, BLM issues permits for access across, and use of, the Light Station

property to the waters surrounding the point for scientific and educational organizations, under permit to the Sanctuary, and for a variety of near shore research and educational projects.

c. San Luis Obispo County General Plan (North Coast Area Plan)
From the January 2000 update of this plan, page 7-45: **"**Uses shall be limited to those necessary for navigational aids, lighthouse use, Passive Recreation, Coastal Access ways and trails, Water Wells and Impoundments, Offices, (limited to marine scientific research dependent on, or specific to, the resources of the Monterey Bay National Marine Sanctuary (MBNMS)); marine resource management facilities, such as docent shelters or patrol boat storage; day-use visitor reception station or interpretive center for the MBNMS; carefully-controlled public access shall be allowed when consistent with the protection of the Elephant Seal habitat and other sensitive marine habitats; public access improvements such as trails, stairs, information displays and safety barriers; and public parking and restrooms to support any such uses, proportioned to the need and carrying capacity of the site". While many of these goals are consistent with BLM goals and objectives for the Light Station, this element was developed before BLM assumed management of the Light Station. BLM's management of the Light Station would be consistent with the County Plan to the extent practicable.


The lighthouse prior to removal of the top portion.

d. California Coastal Commission Strategic Plan
This Plan results from an intensive inquiry into the future direction of the coastal management program in California, conducted by Coastal Commissioners, staff, and members of the public. The Strategic Plan is intended to focus the efforts of the agency to achieve the policy directions of the California Coastal Act of 1976. In an environment of limited fiscal resources and with moderate augmentation as proposed by this Plan, the Commission articulates the following Goals:

1. Improve the protection of coastal and ocean resources;

2. Improve assessment and management of impacts of development in the coastal zone;

3. Improve shoreline access opportunities for the public;

4. Enhance staff capabilities and expertise on technical and other subjects;

5. Enhance the Coastal Commission's leadership role in coastal zone management and in the provision of information regarding coastal and ocean resources;

6. Strive to make the Commission's regulatory and planning processes more effective, efficient, and user-friendly; and

7. Develop innovative approaches to carrying out the Commission's programs, including inter-agency, inter-disciplinary, and volunteer approaches.

The key elements of this Strategic Plan include the Mission and Vision Statements which together articulate a future in which both environmental and human-based resources of the California coast and ocean are protected, conserved, restored, and enhanced, for environmentally sustainable and prudent use by current and future generations. The Plan would be revised annually to reflect achievement of Objectives and completion of Performance Targets. Furthermore, a renewed Strategic Planning effort would be undertaken periodically, in order to identify Goals and Objectives for future years beyond the 3 to 4 years on which this Strategic Plan focuses.

Many of these goals are consistent with BLM goals and objectives for the Light Station. BLM's management of the Light Station would be consistent with the State Coastal Commission Plan to the extent practicable.

3. Specific Statutes and Directives

BLM's general mandates are set forth in the Federal Land Policy and Management Act of 1976, which directs BLM to retain its lands in Federal ownership, plan for the future use of such lands, manage its lands based upon multiple use and sustained yield, in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental and archaeological values. Other Federal laws that apply to the management of the Light Station are the National Environmental Policy Act of 1969 as amended; the Endangered Species Act of 1973 as amended; the National Historic Preservation Act of 1966 as amended; the Archeological Resources Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; the American Indian Religious Freedom Act of 1978; and the Coastal Zone Management Act of 1972. Section 307 of this Act deals mainly with coastal management plans as developed by States and subsequently approved by the Secretary of Commerce. Public domain lands such as the Piedras Blancas U.S. Lighthouse Reserve are excluded from the operation of the Act because the Act's definition of "coastal zone" specifically excludes such Federal jurisdictional lands. However, Section 307(c)(1) (A) of the Act states:

Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.....

The regulations that have been developed to implement the Act also address this issue as follows at 15 CFR 923.33:

Excluded lands.
(a) The boundary of a State's coastal zone must exclude lands owned, leased, held in trust or whose use is otherwise by law subject solely to the discretion of the Federal Government, its officers or agents. To meet this requirement, the program must describe, list or map lands or types of lands owned, leased, held in trust or otherwise used solely by Federal agencies.
(b) The exclusion of Federal lands does not remove Federal agencies from the obligation of complying with the consistency provisions of section 307 of the Act when Federal actions on these excluded lands have spillover impacts that affect any land or water use or natural resource of the coastal zone within the purview of a state's management program. Excluding Federal lands from a State's coastal zone for the purposes of this Act does not impair any rights or authorities that it may have over Federal lands that exist separate from this program.

Thus, BLM must confer with the California Coastal Commission regarding the effects of this Activity Plan on the adjacent coastal zone lands, and must ensure that this Activity Plan is consistent with the State Coastal Plan to the maximum extent practicable.

The main Federal directive that applies to the Light Station is Public Land Order 7501 which established a withdrawal for "the long term protection and preservation of the historic Piedras Blancas Light Station and associated values." With the exception of Public Land Order No.7501, there are no other Federal laws, Presidential proclamations, or Executive Orders which pertain specifically to the 19.9-acre Federal parcel at Piedras Blancas. Legislation has recently been introduced in Congress to create the "Piedras Blancas Historic Light Station and Outstanding Natural Area". This designation would put the Light Station under the mantle of BLM's "National Landscape Conservation System", developed to provide uniform management principles and funding for Special Area management.

Special rules for the Piedras Blancas Light Station were published by BLM in the Federal Register on April 15, 2002 (see Appendix). These rules govern uses of the Light Station by public visitors, researchers, and employees.

BLM has a National Programmatic Agreement with the National Historic Preservation Advisory Council & State Historic Preservation Officers (1997), and a State Protocol Agreement with the California SHPO (2004).

C. Resources in the Management Area

1. Physical Resources

a. Topography
The Light Station is situated on a rocky and gently sloping marine terrace. At the eastern edge of the property, the elevation is about 60 feet, and the western and southern sides of the property are at sea level.

b. Air Quality
The air quality at the Light Station is generally good because of off-shore breezes from the Pacific Ocean. However, the air quality can be poor at times due to noxious odors associated with sea life and guano aeration from the off-shore rookeries on the Outer Islet, a rock formation located west and north of the point (this formation is also called Lion Rock or Piedra Blanca).

c. Geology
The geology of the Light Station is mapped on U.S. Geological Survey Miscellaneous Investigations Series Map I-1097 (1979) by Hall and others. The bedrocks for the Light Station are metasedimentary and metavolcanic rocks of the Franciscan Formation. These consist of finely bedded chert and claystone with unconformable dikes and conformable sills of greenstone. There are also localized pillow basalts. The metavolcanic greenstone and pillow basalt units are more massive and more resistant to erosion than the chert and claystone. The Franciscan formation represents Jurassic age material scraped off the Pacific Plate and attached to the continental margin of North America in Triassic and Cretaceous time. Detailed descriptions of the Franciscan mélanges at the Light Station are contained in Hsu (1949). During the Miocene period, siliceous shale and mudstones of the Miocene Monterey Formation were deposited on the Franciscan formation rocks. Upon Monterey rocks, a series of marine terrace deposits have formed in Pliocene and Quaternary time. The Light Station is built upon two marine terrace surfaces that have been partly eroded. Upon the marine terraces, sand dunes developed in recent time. Stabilized sand dunes are on State Land immediately east of the present Light Station property boundary. The marine terraces form a series of benches stepping upward to the east. The easternmost marine terraces, along the flanks of the Santa Lucia Range are the oldest (about 45,000 years old), and the most recent exhumed terrace (2,000 years old) is at the western edge of the Light Station. Under the waves offshore of the Light Station, a future marine terrace is in the process of forming.

Seismic History
The seismic history of the Light Station is important in understanding why the top of the tower was removed in 1949. A map of the California Central Coast for earthquakes of magnitude 4 or greater between 1945 and 1949 is provided in the Appendix. (Note)

Significant earthquakes that could have contributed to the damage sustained by the lighthouse:
(Not a compete list).
1906 San Francisco Earthquake; Magnitude 8.0
1933 Long Beach Earthquake; Magnitude 7.4
1961 Parkfield Earthquake; Magnitude 6.5
2004 San Simeon Earthquake (Dec. 22); Magnitude 6.5

Engineering Geology
Engineering geology studies of the Light Station were made by Felliz and others (2005). Shallow seismic refraction surveys indicated that the lighthouse rests primarily on Franciscan Formation bedrock with a 6 inch veneer of crushed stone under the east side of the lighthouse. The Fog Signal Building is built on marine terrace sand. The sand thickness under the Fog Signal Building is 5 to 7 feet. Below the sand is Franciscan bedrock. Felliz and others (2005) identified coastal cliff erosion at the Light Station that is threatening the Fog Signal Building. They have recommended procedures for stabilizing or mitigating the cliff erosion.

d. Meteorology

The climate at the Light Station is dominated by the influences of the adjacent Pacific Ocean. Offshore breezes from the north or northwest are common at the Light Station. Wind velocities generally increase in the afternoon. Trees at the Light Station are "flagged" to leeward or south. The average (annual) wind speed for the period between 1984 and 2005 is 15.75 mph. Fog can occur at the Light Station any time of year. During the summer, if temperatures are hot inland, there can be dense coastal fog from early morning to late afternoon. During the winter, fog can occur all day and all night. San Simeon receives 19.44 inches of rainfall annually. Most rainfall occurs in the winter and spring from frontal storms in the Pacific Ocean.

e. Soils

Soils on the Light Station property consist of varying depths of windblown, sandy material overlying fractured bedrock (Baywood and Capistrano series soils). The soils are typically fine sand or fine sandy loam (USDA texture classification), SP-SM or SM (Unified classification), or A-2, A-3, or A-4 (AASHTO classification), and have low amounts of organic matter. Most of the soils are greater than 60" deep, although there are several spots of shallow bedrock within the Light Station property. Slopes are 0 to 10 percent. Water permeability is rapid to moderately rapid. There is a hazard of wind erosion if these soils are left bare for extended periods of time.

f. Hydrology

Water percolates through sand and marine terrace deposits down to the interface with the Franciscan and Monterey formations. The water then moves laterally out to cliff faces where the water emerges as ephemeral springs. There are no fresh water aquifers under the Light Station. Fresh water capacity has always been a historic challenge for management at the Light Station.

2. Natural Resources

a. Vegetation

The vegetation at Piedras Blancas can be characterized as coastal scrub or coastal bluff scrub, heavily impacted by past human activities. Non-native iceplant planted in the 1940's has spread over much of the site, but ongoing non-native control efforts are now restoring native species. The current vegetation appears to be early successional in nature. Given time, mature coastal scrub should develop, similar to that at the nearby Arroyo de la Cruz. Common native species include seaside wooly yarrow (*Eriophyllum staechadifolium*), coastal bush lupine (*Lupinus arboreus*), dudleya (*Dudleya caespitosa*), seaside poppy (*Eschscholzia californica* var. *maritima*), hedge nettle (*Stachys bullata*), and seaside daisy (*Erigeron glaucas*) See appendix E for complete list of species.

A recent photo of the ice plant cover prior to restoration. Note restored areas in the background.

Rare, Threatened or Endangered Plants

The only rare plant currently known from the Light Station is the BLM sensitive species, compact cobwebby thistle (*Cirsium occidentale* var. *compactum*).

A close up view of compact cobwebby thistle.

Non-native plants

The most troublesome species at Piedras Blancas include iceplant (*Carpobrotus* spp.), New Zealand spinach (*Tetragonia tetragonioides*), and Bermuda buttercup (*Oxalis pes-caprae*). Other common non-native plants include scarlet pimpernel (*Anagalus arvensis*), mustard (*Brassica* spp.), and cut-leafed plantain (*Plantago coronopus*). Iceplant was purposefully introduced to the site as low-maintenance groundcover. Ornamentals such as naked ladies (*Amaryllis belladonna*) and African daisy (*Osteospermum fruiticosum*) spread into the native vegetation. Non-native plant control efforts at Piedras Blancas include removal by hand and the application of herbicides.

Volunteers removing mustard in April 2003.


The same area in 2006 after restoration to native flora.

b. Wildlife

Indigenous Species

With the conversion of large areas of iceplant covered ground to emerging native plant species, small, burrowing mammal species, and larger species of mammals and birds have re-appeared at Piedras Blancas. A list of those species can be viewed in the Appendices.

Rare, Threatened or Endangered Animals

While most animal species inhabiting the Light Station are not Federally or State listed species, there is a considerable complement of listed species in the near-shore and marine environment just off shore and surrounding the point. A discussion of these species is included in the following description:

Marine and Near-Shore Birds, Mammals and Plants

The nearshore marine environment at Point Piedras Blancas is influenced seasonally by high wave energy (being an exposed point) and cold, nutrient rich waters (as a result of upwelling, caused by moderate to strong prevailing northwest winds in spring and summer). The intertidal area at Point Piedras Blancas (hereafter referred to as the Point) is both dynamic and rich in species diversity. It is also minimally impacted by humans – either from harvesting or trampling. The intertidal here is mostly rocky and dominant invertebrate species include mussels (*Mytilus californianus*), ochre star (*Pisaster ochraceus*), barnacle (*Pollicipes polymerus*), sea anemones (*Anthopleurs spp*.) and others. Black abalone (*Haliotis cracherodii*) are also abundant, with no evidence yet of "withering foot syndrome", a disease which has decimated black abalone populations further south along the central California coast and Channel Islands in southern California. The high wave energy-adapted sea palm kelp (*Postelsius palmaeformis*) is common on the open ocean side of the Point and rocks. In an area just north of the Point called Beckett's Reef is one of the State's largest and most dense stands of the surface canopy-forming bull kelp, (*Nereocystis leutkeana*). Historically (before sea otters re-colonized the area), this area was considered by commercial abalone divers as one of the best red abalone beds on the coast. Red abalone is still abundant in this area and in the waters immediately adjacent to the Point, though not in commercially harvestable quantities.

In addition to bull kelp, the nearshore sub tidal area around the Point supports an abundance of giant kelp (*Macrocystis pyrifera*), along with the myriad of fishes and invertebrates that are commonly associated with forests of this kelp species. In very shallow water the feather boa kelp (*Egregia menziesii*) is also common.

One of the striking features of Point Piedras Blancas is the Outer Islet; the 110 ft. high rock located approximately 200 meters west of the Point. This rock is a significant nesting and roosting site for Brandt's cormorants and an important roosting area for brown pelicans (*Pelecanus occidentalis californicus*) – federally listed as an Endangered species. The Outer Islet is also home to a breeding pair of peregrine falcons. These falcons and their offspring frequently alight on the top of the lighthouse. Other birds species that are known to nest on the Outer Islet or on the Point are western gulls (*Larus occidentalis*), black oystercatchers (*Haematopus bachmani*), and Brandt's cormorants (*Phalacrocorax penicillatus*).

The Outer Islet is also a significant haul-out site for California sea lion (*Zalophus californianus*), which can be seen here throughout the year, but the highest numbers are seen and heard during the summer months.

California sea lions along the Light Station shore.

Occasionally a few sea lion pups are born here, but they probably do not survive. California sea lions also haul out on the smaller rocks (and on Piedras Blancas Rocks, approximately 1 mile southeast of the Point), and even on the Point itself opposite the Outer Islet. One or two sub adult and/or adult male stellar sea lions (*Eumetopias jubatus*) are sometimes seen hauled out amongst the California sea lions.

Harbor seals, (*Phoca vitulina*), regularly haul out on the long low rock ("Phoca Flats") east of the Outer Islet, on the Point just inshore of the Outer Islet, and east of the Administration building. Sometimes harbor seals are observed hauled out on the sand in Seal Cove and on the long sandy beach east of the BLM property ("South Beach"). Harbor seals are year-round residents and pups are born here in spring.

The western snowy plover (*Charadrius alexandrinus nivosus*), a federally listed Threatened subspecies) occurs and occasionally nests on the sandy beach approximately ¾ mile north of the Point ("North Beach"). Many sea- and shorebird species migrate over or around the Point in spring and fall, both day and night. Among the more remarkable migrations is that of the pacific loon (*Gavia arctica*) which flies by the Point in the tens of thousands on some days in spring.

The pinniped species that receives the most attention at Piedras Blancas is the relatively new colony of northern elephant seals (*Mirounga angustirostris*), which was initiated in Seal Cove. Seals began hauling out here in the fall of 1990. In the winter of 1992, the first pup was born in Seal Cove. The colony has since grown rapidly and expanded in size to include several kilometers of shoreline north and south of the Point and, with approximately 3,500 pups born in 2005, now supports the largest northern elephant seal rookery on the mainland. Elephant seals frequently haul-out in Seal Cove, on the gravel beaches around the Point, and sometimes on the intertidal bench on the north side of the Point.

Northern elephant seal.

Young northern fur seals (*Callorhinus ursinis*) have stranded at the Point in the recent past, but this is a very rare occurrence.

Southern sea otters (*Enhydra lutris nereis*) are commonly seen at Point Piedras Blancas. This federally listed Threatened sub-species can be seen resting alone or in small groups (rafts) in giant kelp, usually along the more protected east side of the Point or in the kelp bed off the southwest end of the Point - an area protected from wind and swell by the Outer Islet and other rocks. Sea otters also regularly haul out on intertidal rocks at two sites at Piedras Blancas. This behavior occurs in areas with little human disturbance and is uncommon in California. During range-wide censuses conducted by USGS-Biological Resources Discipline, sea otters are also seen over a mile offshore of the Point – far from kelp.

Point Piedras Blancas can be an excellent place to observe large whales and smaller cetaceans, as many species use the near-shore waters. Most notable are the cow-calf gray whale pairs, which migrate very close to the Point during spring on the north-bound leg of their amazing trek. To monitor gray whale calf production, the National Marine Fisheries Service has counted these pairs since 1992 as they pass the Point during daylight hours. Humpback whales are also commonly seen seasonally off the Point. Blue, minke, and killer whales are seen less frequently. The most commonly observed small cetacean is the bottlenose dolphin

3. Cultural Resources

a. Historic Resources: Refer to Appendix H.

b. Prehistoric Resources

An archaeological reconnaissance survey of the site was conducted on July 21, 1975 by Robert Gibson at the request of the U.S. Coast Guard. As a result of this survey, archaeological site CA-SLO-77 (P40-000077) was determined to be scattered within the 19.9 acres of the light station property and perhaps further northeast to the adjacent Hearst property. The prehistoric site was recorded initially in 1949 by E. B. Robsen. Prehistoric site CA-SLO-77, a large multi-component archaeological site is comprised of lithic reduction detritus, stone tools, discrete quarrying locations and shell midden deposits. Gibson's surface reconnaissance was hampered by the dense vegetation covering most of the surveyed parcel. As a result, the precise location of site components and areas devoid of archaeological resources were not mapped. Although the site was impacted from the initial construction of the light station property in 1874 and subsequently from other ancillary facilities and maintenance activities prior to the transfer of the light station to BLM in 2002, the prehistoric site had never been formally evaluated for National Register eligibility.

The BLM awarded a contract to SWCA Environmental Consultants in 2005 (Clifford, 2006) to complete an intensive Class III archaeological survey of the 19.9 acre parcel. The focus of the study was to identify, document, and assess the eligibility of CA-SLO-77 and any other prehistoric sites that may be found on the parcel. Historic resources encountered during the project would be documented to augment the existing records on the Light Station property (Primary # P40-040855). In addition to surface recordation of prehistoric resources, the project involved subsurface excavation of two 1 x 1 meter (c. 3.28 x 3.28 feet) test units and hand auger (3.25 inch diameter) tests at 87 locations spaced at 30 meter (c. 98.4 feet) intervals across the study area. Artifacts, ecofacts, and soil samples were collected and taken to the laboratory for sorting, analysis, cataloging, and preparation for curation. Limited testing revealed that the site's subsurface cultural deposits ranged at various depths with the maximum depth of cultural materials identified at 2.30 meters (c. 7.5 feet). Some locations within the site revealed no subsurface deposition but it is possible that cultural deposits were missed within these polygons as testing was spaced at 30 meter intervals. The site was systematically divided in to five loci for purposes of recordation. Although, the contract did not extend north of the BLM property line, visual observations confirmed that site CA-SLO-77 does extend north onto now State Parks property to some undetermined spatial distance.

Results of the field testing confirms that portions of the prehistoric site retains substantial intact deposits where other portions have been impacted by construction and maintenance of the lighthouse; various buildings and structures; road and parking lots; and above and /or below ground utilities. Some of these modern or historic features include electric, telephone, and water lines. Additionally, an extant sewage leach bed with associated pipe lines are on site.

Although there is evidence of considerable disturbance to surface / subsurface portions of prehistoric site CA-SLO-77, testing revealed the site retains a high degree of integrity in subsurface deposits and features. Evidence suggests primary functions of this multi-component site were centered on the extraction or quarrying of raw stone (Monterey chert), initial lithic reduction, and on-site manufacture of flaked stone tools. Additionally, a limited number of food preparation tools such as ground stone fragments, milling stones, and metate fragments suggest temporary encampment rather than extended habitation. Different locations of the site appear to have been more intensively utilized at different periods of times suggesting intra-site variation. Clearly this site has tremendous research potential to yield important information and understanding of the prehistory this cultural region, especially in regards to the relationship between the environment, resource procurement, stone tool technology, and settlement patterns. Because this site offers a high research potential to yield important information on the regional prehistory, site CA-SLO-77 is clearly eligible for inclusion to the National Register under Criterion D.

The field investigations, laboratory analysis of collections, and two calibrated radiometric dates ranging between 3370 to 2940 BP (years before present) and 2740 to 2400 BP, suggest the site or portions of the site were occupied during the Early Period (5500-2600 BP) and Middle Period (2600-1000 BP). Considering that the radiocarbon samples were not taken from the bottom levels of Test Unit 1 and 2, it is possible that the site may have an earlier component dating to the Milling stone Period (8500-5500 BP). In addition, some deposits suggest the site may have also been utilized during the Middle/ Late Transition (1000-700 BP). With the limited amount of excavations to such a large site, it is obvious that further testing and analysis is needed to confirm the temporal periods of use over time at various components of this site. Previously conducted archaeological studies in San Luis Obispo County indicate the native peoples inhabited the region as early as 9,000 years ago at places such as Diablo Canyon, Santa Margarita, and in the Pismo Beach vicinity. Although investigations have no confirmed dates this early at Piedras Blancas, radiocarbon samples tested indicate occupation of at least portions of the site between BC 1420 to BC 990 (calibrated) or over 3000 years before present.

c. Native American Ethnographic

Point Piedras Blancas is located near the cultural interface of two Native American tribal groups, the Northern Chumash and the Playanos Salinan or "beach people" (Hester 1978). Researchers such as Kroeber (1925) and Greenwood (1978) suggest the Salinan occupied the segment of coastline at Piedras Blancas and the Chumash occupied the coastal area as far north as Estero Bay (Cayucos), located about 23 miles southeast of Piedras Blancas. Other researchers such as Gibson (1975) and Priestly (1972) suggest the stretch of Piedras Blancas coastline was occupied by the Northern Chumash..

The geographic and language boundaries between the Salinan and the Northern Chumash (Obispeno) has been under debate since the latter part of the1800s. Mason's studies suggested the Salinan dialects were considered different between the northern Antoniano and southern Migueleno tribal divisions. Hester (1978) stated that little is known about the "beach people" referred to as the Playanos that inhabited the central coast in the vicinity Point Piedras Blancas. Per Greenwood in 1978, the Obispeno Chumash were considered a linguistic subdivision of the larger region of Chumashan. Other studies have suggested that the boundaries between the Northern Chumash and Salinan may have fluctuated over time (Jones and Waugh, 1995). Therefore, it is probable that both tribal groups at some point in time may have occupied Piedras Blancas.

A more recent ethnogeography study of the Salinan and Northern Chumash was conducted by Milliken and Johnson (2005). This report presents a new understanding of how these native communities might have existed at Spanish contact from 1769 to 1810. Their study focused on the coastal region between San Luis Obispo Bay and Lopez Point, placing Piedras Blancas in the northern half of the study area. This study was focused on language boundaries rather than the location of specific communities. In addition to the two widely accepted alternatives presented above by Krober and Gibson, Miliken infers that there is sufficient evidence to suggest the Playano people were related to the Salinan; however, he goes on to state that it is possible the language is related to a now extinct Chumash language. Johnson believes that we do not have enough information yet to determine which of the above alternatives is the most acceptable.

d. National Register Historic District

The Piedras Blancas Light Station (Primary # P40-040855) went into service on February 15, 1875 as an aid to navigation and to promote commerce in the coastal region. Its first-order Fresnel lens provided a welcome beacon to mariners plying the central coast. The lighthouse, designed and constructed by the U.S. Lighthouse Service, is recognized as one of the most ornate brick masonry and cast-iron towers constructed on the west coast. Past earthquake damage, including the December 31, 1948 quake, damaged the lantern room and watch room enough to warrant removal of the upper portion of the light tower by the Coast Guard the following year. The tower was capped with a concrete platform and the first order Fresnel lens was replaced with a 36" Aero Beacon.

In spite of the drastic change, the site was determined eligible under Criteria A and C and subsequently listed in the National Register of Historic Places on September 3, 1991 as a District. Piedras Blancas was one of ten light stations in California nominated through a multiple property submission and evaluated as significant with respect to the historic context of "Maritime Transportation in California from 1840 to 1940". Specifically, the period of historic significance for Piedras Blancas Light Station was determined to be from 1875 to 1940. Resources within the District consisted of three contributing and eight non-contributing facilities (buildings and structures). The contributing facilities were the 1875 lighthouse, the 1906 fog-signal building, and the 1906-1907 oil house building .

Of the eight non-contributing facilities (buildings or structures) in the District, note that the Navy Building in the National Register nomination identified this building's construction date to the 1940s when in fact it was constructed in 1960 (per written records and building drawing)s. The seven non-contributing features included the four 1960 quarters, the old 1940s Coast Guard Office, the 1935 Pump House (now Tank Storage Building), and the 1958 Water Tank. Note that the Coast Guard building was initially constructed in 1876 rather than 1935. This building was so severely modified over the years it resulted in a loss of its original architectural integrity.

e. Paleontology

The Franciscan Formation rocks that underlie the Light Station have a very low potential for the occurrence of paleontological resources (fossils).

f. Historic Landscape

The development of most Light Stations was based upon the needs of the U.S. Lighthouse Service. Amenities were hard fought and often supplied by the lightkeepers' families. The essential elements that constituted a typical Light Station

infrastructure were fairly prescribed. Elements such as the wharf, fuel/oil house, keeper's quarters, and other facilities were needed for the operation of the site. The historic viewshed of many lighthouses present a stark utilitarian picture. However, there were instances where trees and plants were added to reduce the hardships born of weather and barren soil. Such was the case at Piedras Blancas. For most of the year, strong winds, averaging 16 mph blow across the point. Exposure to wind and elements can be debilitating. In 1932, keeper Norman Francis planted a row of Monterey Cypress in a generally northeast to southwest line on the north side of the lighthouse, starting on the northern edge of the lighthouse and running northeast to the north of the head keeper's residence. This wind break was a welcomed addition to the site and contributed to the health and well-being of site residents who were constantly under assault by the wind. In the years since the site's abandonment by the Coast Guard, these trees have been allowed to grow randomly and in most cases, have "flagged" due to the extreme wind conditions.

4. Visual Resources

The central coast of California offers a unique visual experience with its dramatic coastal vistas, and untrammeled mountain backdrop in the Santa Lucia Range which is largely undeveloped. Once past Hearst Castle State Park, and the village of San Simeon the natural beauty of the area opens up for the visitor, offering solitude, a reduced sense of pace and incredible photo opportunities. Piedras Blancas offers a bounty of natural vistas and photo opportunities. The Outer Islet, Piedra Blanca #1 and #2, and La Cruz Rock to the north are dramatic geological features that dominate the seascape to the south, west and north of the Point. Clouds and fog can change the scenic experience in just a few minutes as they rush in across the Point, shrouding the Light Station in its ethereal curtain. Traveling northbound, the visitor is treated to a dramatic juxtaposition of the Piedras Rocks in alignment with Piedras Blancas Point. Sunlight and cloud cover and northbound travel add to the drama of the scene as visitors approach the Point. Traveling Southbound on State Highway One, the Outer Islet or "Lion Rock" as it is historically called, frames the historic features on the Light Station to further complement the visual qualities that this site has to offer.

D. <u>Existing Land Uses</u>

The Piedras Blancas parcel is owned by the United States, both surface and all mineral rights, and is under the jurisdiction of BLM. BLM's Bakersfield Field Office provides administrative, resource management and operational support to the Light Station. Travel time from Bakersfield, California to the Light Station is approximately 2.5 hours (150 miles). The BLM official records show the following for the parcel:

- The parcel has been withdrawn (made unavailable) from surface entry, mining, mineral leasing, and mineral material sales for a period of 20 years for the long-term protection and preservation of the historic Piedras Blancas Light Station (per Public Land Order No. 7501dated October 12, 2001)
- Right-of-way reservation CACA 44273 to BLM for a communication facility.
- Right-of-way CACA 43367 to the Coast Guard for a Federal Aid to Navigation (light).
- Right-of-way CACA 47050 to the State of California for a communication facility.
- Right-of-way CACA 47075 to the County of San Luis Obispo for a communication facility.
- Right-of-way CACA 47051 to the U.S. Weather Service for a weather station.
- No other withdrawals, or classifications are in effect.
- No grazing authorizations; no mining claims.

1. Public Benefit Communication Facilities

BLM is responsible for maintenance and operation of the Light Station's Aid to Navigation (lighthouse beacon). The beacon was installed by BLM and Coast Guard personnel in 2002. BLM recently developed and reserved a site near the administration building for a communications facility (tower and vault). This allowed for the relocating of the communications equipment that had been located in the lighthouse. The new communication site is used by the State of California and San Luis Obispo County as a strategic communications site. Use of the site is authorized by a BLM right-of-way. The location of the communications site at Piedras Blancas offers a unique repeater capability on this segment of the central coast. Until this communications site was completed in 2005, both State and County public safety agencies had no communications capability beyond Piedras Blancas. Coverage now extends well past Ragged Point, and Lucia, California. The U.S. Weather Service (NOAA) maintains a weather station year round at the site and also conducts upper atmospheric wind monitoring studies (PACJET) from the first of April to the first of June each year. The weather station was recently relocated to the new communication site, and is authorized by a BLM right-of-way.

2. Recreational Uses

The central coast, notably the San Simeon area, is a popular tourist area of California. The area hosts approximately 350,000 visitors/year. Most of this visitation is directed at Hearst Castle State Historic Monument (managed by the California Department of Parks and Recreation) and beach/ocean related recreation. Many visitors enjoy sightseeing

along scenic State Highway 1. Bicycle trips along this Highway are also popular. Seasonal attractions, such as the arrival of the elephant seal population attract significant numbers of visitors that crowd the two lane State Highway 1, especially on weekends and summer months. This influx of visitors puts a burden on State and County emergency and law enforcement services. The possibility of getting close to an old lighthouse always seems to interest the public.

a. Public Tours

Since June, 2003 BLM has hosted tours of the site on the third Saturday of the month. The tours are scheduled through the National Geographic Theater, located at Hearst Castle State Historic Monument. Bus service is provided by the State Park from the Castle's Visitor Center, approximately 20 minutes before tour time. The tours are led by BLM, State Parks and community volunteer staffs dressed in period lightkeeper's uniforms and civilian dress (circa 1890). At present, these guided tours are conducted along the existing interior roads and into the lighthouse. No access to the top of the lighthouse is allowed at present due to structural damage to the stairs, and the current, small access hatch leading out to the top. During the tour, visitors photograph the surrounding vistas, historic structures, and during certain times of the year, experience the north-bound migration of the California Gray Whale. Visitors are not allowed free access to the site because of cultural resource issues, current site conditions, and the presence of sensitive communications equipment.

3. Biological/Geophysical Research

For the past 12 years, the site has been a strategic location for National Marine Fisheries Service-Southwest Fisheries Science Center for monitoring the annual northern migration of the California Gray Whale which generally occurs from the middle of March through early June each year. The purpose of the effort is to monitor fluctuations or variability in calf production related to environmental conditions in the Arctic that affect food supply. The U.S. Geological Survey (USGS), Biological Resources Discipline (BRD), Western Ecological Research Center (WERC) conducts site-dependant, near-shore research on the threatened California Sea Otter and other marine mammals. WERC biologists conduct biannual, range-wide sea otter surveys, maintain state-wide sea otter stranding records, and amass data on the Piedras Blancas northern elephant seal rookery located on the shoreline and waters surrounding the Piedras Blancas Light Station. Various universities under the umbrella of the "Partnership for Interdisciplinary Studies of Coastal Oceans" (PISCO) conduct a variety of tide pool and other related research along Piedras' rocky shores. This research is permitted, and monitored by the Monterey Bay National Marine Sanctuary, headquartered in Monterey, California. They issue permits and provide oversight to various research organizations for ocean studies. Access through the BLM land at the Light Station, however, is not authorized by the MBNMS permits. Researchers must seek access through the Light Station from BLM.

Monitoring the whale migration at the Light Station.

4. Volunteers and Partnerships

BLM hosts an average of 55 volunteers from various local communities adjacent to Piedras Blancas. This dedicated organization donate their time in two primary areas: first, the weed eradication and "Return of the Natives" program which they manage entirely. With minimal staff oversight, these individuals plan and execute work strategies to completely type-convert the site back to a native plant environment. Volunteers also manage the public tour program.

The Piedras Blancas Light Station Association was formed in 2004 to support the Light Station's restoration efforts by seeking funding from various sources to augment appropriated funding. This organization provides an on-site presence with an Executive Director who works in conjunction with the BLM site manager. This individual also provides staffing for the Association's gift shop, located in the fuel and storage building, located on the east side of the lighthouse. The Association uses other means of attracting funding by holding special events, both at the Light Station and off-site; attending local community events, and fund-raising enterprises such as annual mailers, auctions, and other events. The Association works with the BLM manager to set funding priorities and project planning for the Association.

BLM works closely with the State Department of Parks and Recreation at Hearst Castle State Park (Assistance Agreement/MOU). The primary reason for creating this partnership was to share services and capabilities, thereby eliminating duplicate services in a small geographic area. The State has been a primary supporter of BLM efforts to restore the Light Station through personnel exchanges, maintenance, housing, tour support, etc.

The National Geographic Theater currently manages the BLM ticket reservation system for lighthouse tours through an MOU. The NGT staff and management are strong supporters of the Light Station project and provide outreach and marketing in the local area and other locations around the central coast. Their accurate record-keeping system provides invaluable demographic information for planning, outreach and visitation trends.

The California Coastal National Monument (BLM) extends from the Oregon to the Mexican boarders and out to sea approximately 12 miles. Adjacent to the Light Station are a group of offshore rocks and islands which are a part of the Monument. Piedras Blancas is one of the few places on the central coast where visitors can see and enjoy segments of the Monument, including both bird and pinniped rookeries in a natural state. In this instance, Piedras Blancas' staff and volunteers provide support to the Monument by providing access, interpretation, educational information and resources to the Monument.

E. Existing Facilities and Their Condition

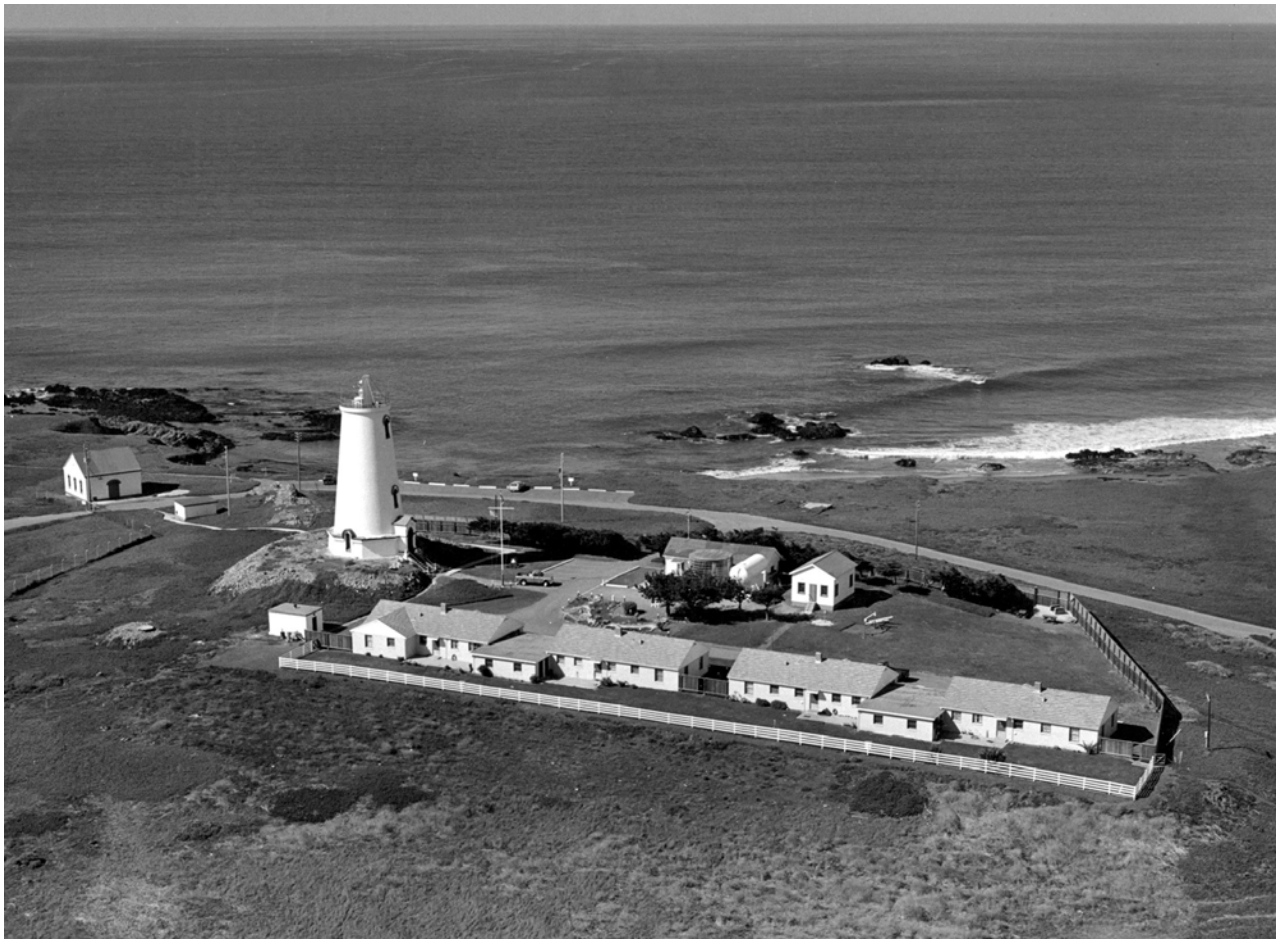
1. Facilities

Light Station facilities consist of a truncated lighthouse (1875); a fog signal building (1906); a fuel/oil house (1907); a tank storage house that houses the site's water supply and treatment facilities; two residential duplex housing units (1960); and a former Navy "Mobile Instrumentation Station" (1960) which now serves as administrative space and storage; a garage/boathouse (1991); and a remnant fuel/storage building (1876). Three of the structures, the lighthouse, fog signal building and fuel/oil house are on the National Register of Historic Places. Site access is via an oiled/partially-paved single lane road approximately ¼ mile long. A secondary internal road system approximately ¼ of a mile in length leads to the MIS facility and residential housing. Electrical power and phone service is via a ¼ mile long wooden pole line maintained by Pacific Gas & Electric Company. This pole line roughly parallels the access road. The pole line terminates on the north side of the tank/storage building, where the powerline goes underground to a main distribution panel that serves the entire site. This system was upgraded with a new 400 amp distribution panel and underground residential electrical feed lines in 1974. A sewage disposal system with leach fields exists on the south side of the point. This system services the four residential housing units and the administrative building located in the former Naval Mobile Instrumentation Station (MIS). Water is currently supplied by a surface water source (spring), which was originally put into service in 1935. This system is located ½ mile northeast of the Light Station on lands formerly owned by the Sunical Land Company, a division of the Hearst Corporation. In March 2005 those lands were sold to the State of California.

2. Access and Circulation

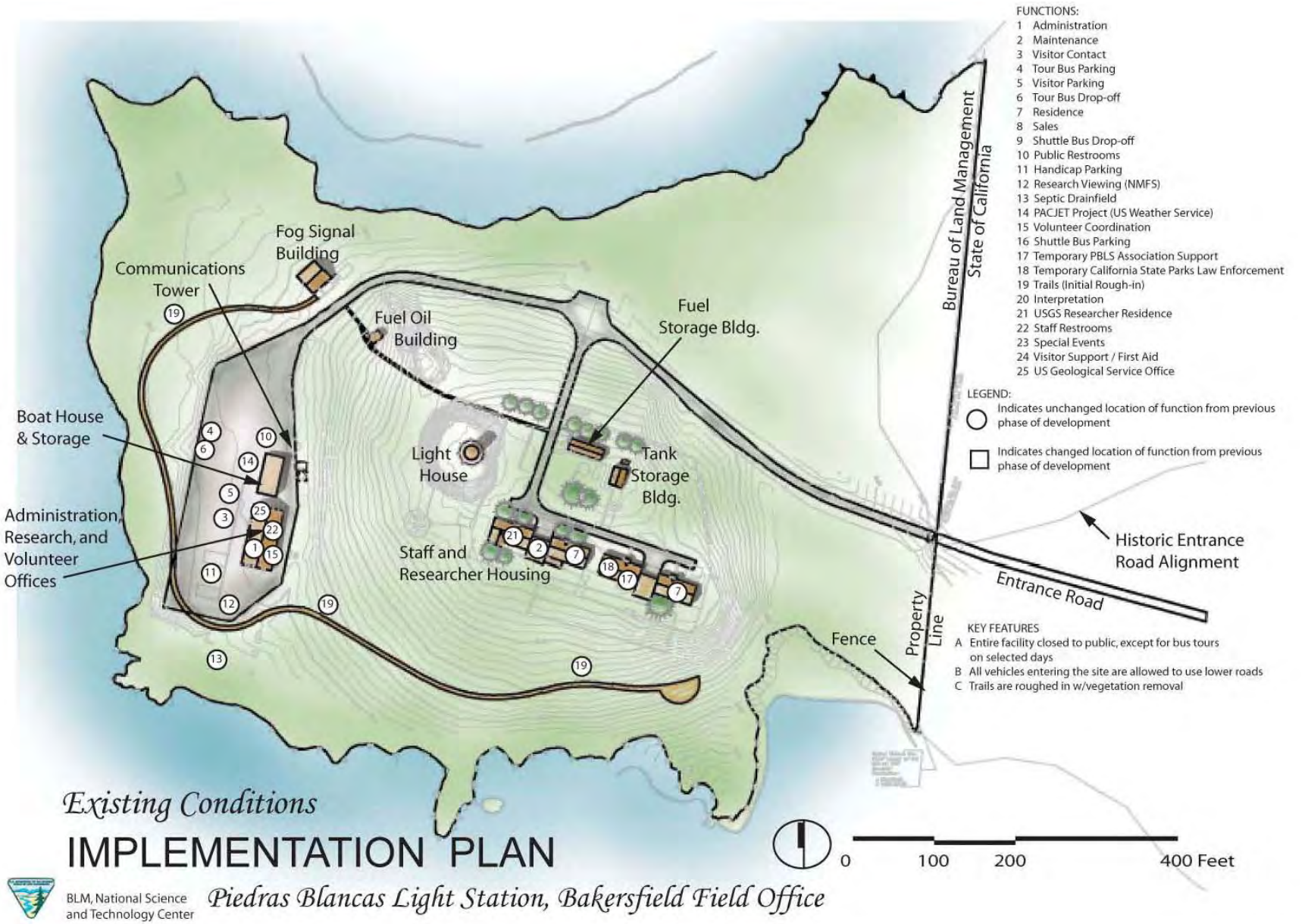
The historical access to the Light Station was a single lane dirt road from the north. The Hearst Corporation memorialized this historic access route in 1935 by granting an easement to the United States for this road. It appears that this easement was not recorded in the San Luis Obispo County records. In 1947 the Hearst Corporation granted an easement for the powerline that now services the Light Station. A rudimentary road was partially constructed from State Highway 1 to the Light Station, parallel to the powerline for installation and servicing of the powerline. In 1958 the

Hearst Corporation granted an easement to the United States to use this powerline road as the new access route to the Light Station. This document: 1) does not appear to be recorded in the San Luis Obispo County records; 2) has no legal description; 3) appears to give the United States only administrative access to the Light Station (no public access); 4) extinguished the 1935 road easement which authorized the historical access route. At the present time, access to the



The Light Station circa 1965.

Light Station is from State Highway 1, via the 1958 easement (powerline road). This road was built for passenger cars and light trucks, not buses. The existing turn-off from State Highway 1, located on a semi-blind corner, is unsafe for visitors and staff. Large buses are at risk crossing the road to enter the site, and the location has witnessed many accidents over the years. CALTRANS is also planning a re-route of State Highway 1 to the east in this area, due to wave erosion threatening a stretch of the Highway just north of the Light Station. Once at the Light Station, a separate road departs from the main road and leads past the front of the lighthouse to the four residences, and to the Tank Storage Building. A 30" wide concrete sidewalk winds from the lighthouse, down to the Fog Signal Building. Because of the dense growth of iceplant, pathways have been cleared in some areas to allow visitors better access to various locations around the Light Station to take advantage of the many visual opportunities the site offers.



Existing Conditions

IMPLEMENTATION PLAN

BLM, National Science and Technology Center

Piedras Blancas Light Station, Bakersfield Field Office

December 2006

F. Adjacent Land Uses

Lands adjacent to the Light Station have been owned by the Hearst Corporation, used for livestock grazing, and have been closed to any public use. In March 2005 lands on the west side of State Highway 1 between Ragged Point and Pico Creek were transferred to the State of California. Public use, especially near beach areas for surfing and other activities, has continued on a limited, but growing basis. Approximately two miles to the North, the Piedras Blancas Motel (built in 1937) provided one of the last stops before journeying north along State Highway 1 to points north. This facility has been recently purchased by the Trust for Public Lands. Some of the possibilities for re-use of that facility include a youth hostel; a parking lot for access to the light station beaches and other area features; and/or a small interpretive node for visitors to that area of coastline. Two miles to the south the Elephant Seal Vista Point (VP), managed by the Friends of the Elephant Seal, (a non-profit organization) has done a remarkable job of providing public education and outreach. Soon, The California Department of Parks and Recreation will augment the efforts of the Friends, since they have assumed management of the site.

Visitors viewing elephant seals on lands southeast of the Light Station.

Both the motel to the north and the Elephant Seal VP facilitate unauthorized public trespass that periodically impacts the Light Station.

G. Socio-Economic Conditions

The general area surrounding the Light Station (northwestern San Luis Obispo County) is a low population, rural area. The nearest community is San Simeon approximately 8 miles to the southeast. This community consists of several motels and dining establishments along State Highway 1. The nearest community of any size is the unincorporated community of Cambria, approximately 12 miles southeast of the Light Station. Cambria has a population of about 6,500. The entire population of San Luis Obispo County is about 258,000, and is growing slowly at the rate of about 1% per year. The ethnic diversity of the County is:

Caucasian	201,300
Black	5,600
Hispanic	47,100
Other	10,000

There are no distinguishable ethnic, racial, or socio-economic minority populations in the vicinity of the Light Station. Economically, the residents of the County can be characterized as middle class to upper middle class. Approximately 55% of the adult residents of the County have a college degree or some college education. The overall County unemployment rate is 3%. The main industries in the area of the Light Station are tourism and cattle ranching. Tourists

from all over the world come to the central California coast to enjoy the scenic vistas, the mild climate, the beaches, and other tourist attractions, including the well-known Hearst Castle State Historic Monument. Jobs in the County are distributed as follows:

Retail Trade	23%
Government	34%
Durable Manufacturing	6%
Non-Durable Manufacturing	4%
Finance/Insurance/Real Estate	8%
Trans./Warehousing/Utilities	6%
Construction/Mining	11%
Agriculture	8%

PART II MANAGEMENT ISSUES AND CONSTRAINTS

A 1948 aerial view of the Light Station just prior to the truncation of the lighthouse.

PART II. MANAGEMENT ISSUES AND CONSTRAINTS

A. Issues

1. Restoration/Reconstruction of Historic Structures

Restoration/reconstruction of Light Station features was an issue of maximum importance that surfaced during BLM's public scoping meetings in 2001. The National Park Service has defined the period of greatest historic significance for Piedras Blancas as the years 1874 to 1940, when the site was evaluated for inclusion on the National Register of Historic Places. While this period was important to the surrounding region (relative to the Spanish land grant period, gold rush, and early central coast colonization), it was determined that a period more suited to the functional aspects of the Light Station should be considered. This evaluation was conducted and as a result, BLM has redefined the period of greatest historic significance as 1875 to 1940. During that period, the original Aids to Navigation (the lighthouse and the fog signal) were constructed and entered into service. Support structures and features, including the keeper's triplex, wharf, head keeper's house, watch room fuel/oil house, barn, water system and other elements were added as needed to support those activities. The historic features at Piedras Blancas have suffered extensive damage and/or removal to meet changing mission requirements by the U.S. Coast Guard and others. Dry rot, structural damage and a general lack of maintenance characterize the condition of most of the structures and infrastructure. The historic housing, barn, wharf, and other lesser features are missing. The lighthouse, once reputed to be one of the most ornate constructed on the west coast, had its top structures including the fourth landing, watch room and lantern room removed in 1948/49. While still impressive, this structure has had several internal modifications that are contributing to the degradation of the structural integrity of the lighthouse.

Protecting the historic viewshed in the historic district is also a high priority. Piedras Blancas is one of only eight original lighthouses authorized to be constructed on the west coast. Retaining the character-defining elements of this complex is a key element in this planning effort as are the consideration of reconstruction of features that would complement the existing features still in place.

2. Public Visitation and Circulation

In the past the Light Station was open to visitation on a very limited basis. Public visitation was an issue of maximum importance that surfaced during BLM's public scoping meetings in 2001. There are opportunities to work with the California Department of Parks and Recreation (Hearst Castle State Historic Monument) and others to continue and expand a public use program. There are also opportunities to work with the Piedras Blancas Light Station Association in fund raising efforts, merchandising, etc., to enhance the public's visitation experience. However, public visitation could result in conflicts with normal site management, research activities, and unprotected site resources. In addition, hazardous cliffs, lack of adequate trails, lack of ADA-compliant facilities, the presence of cultural resources, uneven ground, and heavy plant cover preclude unrestricted public visitation. Rocky beaches and the seasonal haul-out of adult and juvenile elephant seals pose a hazard to both visitors and animals. The presence of sensitive plant and animal species places further constraints on public visitation.

The access route from State Highway 1 to the Light Station is an issue, from an aesthetic, legal, engineering and safety standpoint. Entry off the State highway is on a semi-blind corner. The road was designed for light vehicles and not heavy (45,000 GVW and greater loads that are now occurring), and it is in a location that was not part of the Light Station infrastructure during the 1874 to 1940 period. Internal access roads were created by the US Navy in 1959/60 to service the Navy Permit Area. This road enters the site in an East-West direction which sweeps around the north side of the point and turns south to the MIS. It continues around the rear of the MIS and Boathouse and closes the loop near the fog signal building. A short spur road leads up towards the lighthouse and site residences. While the general layout is adequate, this single lane road will not support contemporary traffic. Parking for employees and visitors is inadequate. The present layout is a remnant of the Navy layout and barely handles large vehicle turn arounds when heavy equipment or tour buses enter the site. The entire road infrastructure is under-engineered, and is breaking down due to lack of maintenance and heavier than usual use. Parking needs for the site would evolve, and some form of multi-vehicle parking would eventually be needed to accommodate increased demands from visitors and staff.

At present, there is only one sidewalk that connects the lighthouse to the fog signal building. It does not meet ADA requirements for access. The vistas afforded at different points around the Light Station are magnificent and worthy of experiencing. However, there is little opportunity to enjoy or interpret them to groups or individuals under present conditions.

3. Easement Acquisition

Prior to the State of California acquiring the lands adjacent to the Light Station, the United States had negotiated two easements from the Hearst Corporation, one for a surface water source to supply the Light Station, and one to provide administrative access to the site for purposes of maintaining the Aid to Navigation. Neither of these easements was recorded in the San Luis Obispo County records, nor are there provisions in these easements for the purpose of permitting public access.

a. Road Access Easement

The current legal and physical access to the Light Station may need improvement if public visitation is to occur. Prior to 1958, the Light Station staff would travel a more scenic route through the sand dunes northeast of the Light Station. It was a primitive, unpaved route however, and subject to shifting sands and weather. The U.S. Lighthouse Service constructed raised "trestles" that allowed Lighthouse Station personnel and visitors to drive safely across the dunes and onto the site. In 1958, the US Coast Guard renegotiated the access easement to the south in what is now its present location. The 1958 road access easement was adequate for Coast Guard needs, and there was very little traffic on State Highway 1. However, there is a great public demand to visit old lighthouses, and the entrance to the Light Station lies mid-point on a semi-blind curve. This turn off point is hazardous to visitors turning off of State Highway 1 to visit the Light Station. It is especially problematic for tour buses crossing into the entrance. A gate at the turn off point is controlled by an electronic keypad, and requires dismounting the vehicle to activate the gate control. This leaves longer vehicles exposed onto the shoulder of the highway and is a clear hazard, both for vehicles accessing the site as well as vehicles traveling south on State Highway 1. Lastly, the present road is inadequate for long-term use by bus traffic of 35,000 lbs. GVW. It is a single-lane road, requiring traffic to pull off the road to allow oncoming traffic to pass, thus breaking down the shoulders of the road, and aggravating the noxious weed infestation/migration of noxious weeds into the Light Station via incoming vehicle tires.

Looking west along the current access road to the Light Station.

b. Water Supply Easement

The existing water source is a spring, located approximately ½ mile northeast of the Light Station on State of California property. The site was developed by the U.S. Lighthouse Service in 1935 and has been the primary source of water for the Light Station since that time. It is a large seep that is overgrown with vegetation and is a prime habitat for the listed Red Legged Frog (*Rana draytonii*). Feral pigs root the marsh area and cattle grazing in the area break down the perimeter fence and trample the ground to the east of the spring box. This results in high turbidity and high nitrate content, in spite of efforts to treat it on the receiving and distribution end of the system, thus putting residents and visitors at risk. This spring has been poorly-maintained until recently. However, attempts to upgrade this source have

been of questionable value since seasonal rain leaches contaminants into the system which persist throughout the spring and early summer months. The existing, surfaced-influenced source does not meet minimum standards set forth in the Safe Drinking Water Act.

4. Improvement of Infrastructure and Administrative Facilities

The wind blowing across Piedras Blancas averages approximately 16 mph throughout the year. Generally the wind blows from a Northerly direction, except during storm season, when it reverses and comes in from the south. The constant wind brings fine silt, salt, and salt-laden moisture onto the site. Over the years, lack of maintenance, poor materials choices, and lack of appropriate skills have profoundly degraded most site facilities. Normal maintenance practices do not provide for the level of care that is required to keep facilities serviceable in these conditions. Much of the time spent at this site is on maintenance-related activities, which take valuable time away from more pressing issues such as stabilization of historical structures.

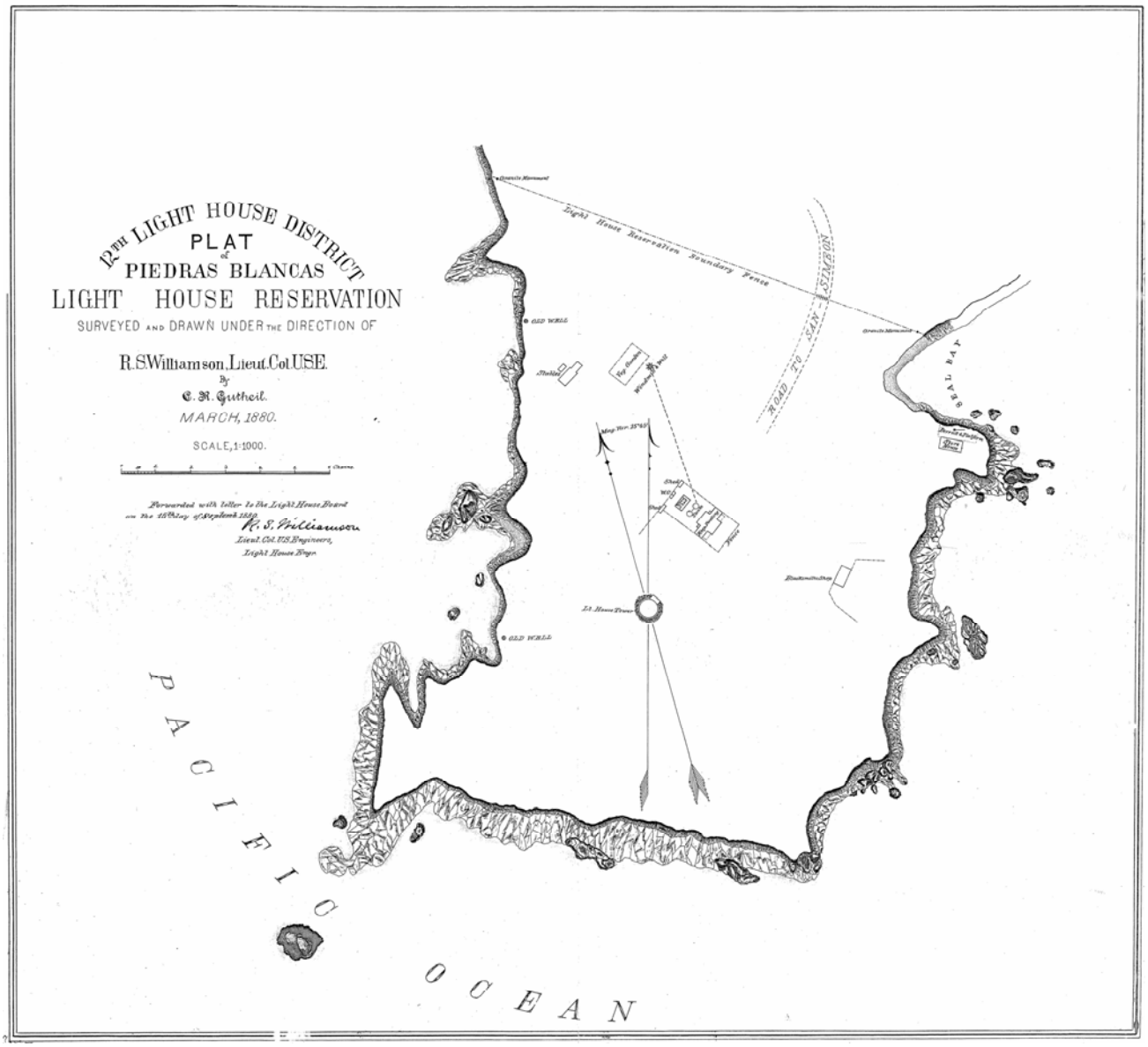
The Light Station's utility infrastructure and housing date back to the 1960's era. Extreme environmental conditions have taken a toll on most site features. The current administrative facility, the former U.S. Navy Mobile Instrumentation Station (MIS) was a purpose-built structure, designed for Cold War military uses and was to last just 5 years. Some structural steel building components on the north side of the building have completely disappeared due to corrosion. During inclement weather, the building is subject to flooding. It also fails to meet modern building code and safety regulations. It was not designed to current seismic standards. Lastly, the building sheathing is acting like a structural feature and partially supporting the north side of the building. BLM has invested significantly in efforts to bring these facilities up to current standards, but the facility is on the whole, inadequate for current needs. Emerging mission needs would identify the need for structures that lie "lighter" on the landscape, complement the Historic District, and better utilize precious space.

Most of the structures at the Light Station, both contemporary and historic, are in serious need of corrective maintenance. Until BLM assumed management responsibility for the Light Station, little effort was made to preserve the remaining historic features. In 1991, the US Coast Guard awarded a contract to renovate the lighthouse. The intent of this renovation was to preserve the tower in order to maintain a stable platform for the Aid to Navigation. Since the preservation of historic features was not a priority, many well-meaning upgrades actually detracted from the historic preservation objectives that would have been necessary to restore the lighthouse to current standards. Most of the buildings and features were in an advanced state of disrepair, with lead-based paint covering all structures. Some of the underground pipe infrastructure contained transite or iron pipe sheathed in asbestos-lined transite pipe. Water, electrical, and sewage systems had received little attention, resulting in sub-standard facilities. The USF&WS upgraded the four on-site residences, interior roads, and office spaces in the former Navy Mobile Instrumentation Station (MIS). The site's water source, storage, and treatment facilities required removal and replacement. The current water treatment facilities require additional work to meet California Safe Drinking Water Act standards. Vegetation on the surrounding grounds was allowed to grow unchecked, resulting in a serious overgrowth of iceplant, New Zealand Spinach, and other weedy species.

The road and parking system is in similar condition. The last roadwork performed on interior roads was in 1991. As plans to accommodate future visitor use, research and restoration proceed, facility development must reflect current and future support needs. As visitor use and management evolves at the site, providing for visitor movement would be a key component. With increased numbers, sewage, water supply, fire protection and other facility development needs are emerging. The boat house was constructed to house research boats and vehicles. Research boats are no longer housed at Piedras Blancas, and the building was a poorly designed and constructed structure. It is plagued with moisture, which affects anything stored within. Site planning to correct many of these deficiencies would have to meet more stringent requirements to comply with coastal development guidelines and restrictions and to complement on-going site management requirements for administrative, research, storage, maintenance, and site access and circulation. As with all new construction and site design proposals, access must be assured for all people, regardless of physical or mental challenges.

There are four residential housing units located on site. These concrete block structures were built in 1960 by the US Coast Guard. They have served as residential housing for both full-time and transient researchers and site management personnel since the 1960's. Currently, only one full-time resident is occupying one unit. Seasonal whale researchers occupy another unit during the months of March through June, during the gray whale migration. Other transitory researchers occupy the same unit as space is available. A fourth unit is currently serving as day offices for the California State Parks rangers and resource ecologist assigned to the newly-acquired holdings on the west side of Highway 1. Another part of that unit is currently occupied by the Piedras Blancas Light Station Association until more permanent

quarters can be made available. The last unit is occupied by BLM personnel on temporary duty status during the week. There is a serious shortage of adequate, affordable housing in Cambria and other locales within the normal commuting



An 1880 diagram of the Light Station and its facilities.

range for the Light Station. As additional staff is authorized, the need for on-site housing would be re-evaluated. Housing facilities serve seasonal needs for some projects, but place increased demands for water, sewer, and maintenance. Administrative and research infrastructure are minimal or outdated. Future research efforts would, of necessity, be authorized based upon capital investment by requesting agencies, physical space availability, and site dependency.

Proper treatment of any hazardous materials must be exercised in any construction/reconstruction projects within the Light Station, such as lead-based paint and asbestos-containing building materials. When dealing with a site that has been occupied as long as the Light Station, it is possible that discoveries of previously unknown hazardous material contamination could be made.

Conducting structural testing on the light house in 2006.

5. Public Benefit Communication Facilities

When BLM assumed ownership and management of the Light Station, it was conditioned on the continued presence and operation of the lighthouse beacon (Aid to Navigation). Therefore, the Coast Guard applied to BLM for a right-of-way for the continued use of the beacon. This right-of-way (Serial #CACA 43367) was reserved to the Coast Guard with the agreement that BLM will operate and maintain the Aid to Navigation. The Coast Guard issued BLM a Private Aid to Navigation license. In May, 2002, Coast Guard and BLM personnel removed the existing emergency beacon and installed a new VRB-25 beacon. On May 25, 2002, Assistant Secretary of the Interior, Lynn Scarlett threw the switch that illuminated the new beacon. The beacon is automated and operates on a full-time basis. However, with the current unreliability of the site's electrical system, the beacon can be subjected to outages for several days. When electricity is restored, it is sometimes necessary to reset the beacon's lightchanger, or perform minor maintenance. At current staffing levels, this is sometimes problematic, due to lack of a full-time presence on site. Operational guidelines and maintenance levels for the beacon are reviewed by the USCG annually.

The Piedras Blancas Light Station provides a strategic service to local public safety agencies by providing space for communications equipment that allows for critical communications links north from the site to areas that cannot be served by communications sites such as the State's Rocky Butte facility in the Santa Lucia Range, to the east of San Simeon. Regional topography and access problems prevent the development of new facilities in the local area that could provide those services. The lighthouse tower has served as an ersatz radio equipment vault and tower for the past 30+ years. Its location on the point provides an opportunity to create an angle of transmission that reaches the northern parts of San Luis Obispo county such as Gorda and Lucia, California. In 1974 the U.S. Coast Guard installed a radio beacon complete with a 70' fiberglass antenna mounted on the top of the truncated tower. In the 1980's, the State of California secured a permit from the Coast Guard to install public safety communications equipment for the California Highway Patrol, Department of Fish and Game and Cal Trans. In 1999, the Sheriff of San Luis Obispo County petitioned the U.S. Coast Guard, and subsequently BLM, for a site to house the county law enforcement, fire, ambulance and hospital radios in order to service the northern end of the county. In 2005, BLM provided a new site for a communication tower and vault at the Light Station. This allowed for the relocation of all communication equipment from the lighthouse to the new site, which is adjacent to the administration building (MIS). Three governmental organizations have received right-

of-way grants from BLM to use the new site for public-benefit communications. The new facility is very limited in vault and tower space.

6. Interpretation of the California Coastal National Monument
The California Coastal National Monument consists of all of the small rocks, islands, and pinnacles off the California coast. It is managed by BLM, and is a very important visual and wildlife resource. Locations for the interpretation of this National Monument are quite limited. The Light Station's proximity to the coast, and recent acquisition by BLM of the Outer Islet, Piedras #1,2, and La Cruz Rock to the north of the site, offers a unique opportunity to interpret the resources of this National Monument.

7. Biological/Geophysical Research
For the last 26 years, Piedras Blancas Light Station has served as a strategic location for a variety of near-shore and marine research. Refer to the Appendix for a discussion of current research projects.

8. Biological Restoration
Active restoration of the native vegetation and wildlife habitat at Piedras Blancas currently focuses on the elimination of weedy, non-native plants. Ongoing efforts to remove iceplant and other weedy species have been very successful, resulting in the return of native vegetation and a concurrent increase in use by wildlife, especially birds. Native vegetation has returned in those areas cleared of iceplant, either from a pre-existing seed bank or easily disseminated propagules (e.g., seaside wooly yarrow). To establish diverse native plant communities, additional inputs of native species may be necessary from nearby, less disturbed sites, such as Arroyo de la Cruz.

9. Protection of Prehistoric Resources
Piedras Blancas Point is a large, complex cultural site. Designated CA-SLO-77, this site has been impacted considerably by previous activities while some components, especially subsurface features and deposits, retain integrity and high research potential. An understanding of the depth and complexity of this site is essential to provide adequate protection, management, monitoring, and long term preservation. Recent investigation of prehistoric resources revealed a significant distribution of materials on the Point. Evidence of prehistoric occupation is discernible around most contemporary development. It is essential to understand the regional importance and composition of this site so that appropriate management and mitigation measures if necessary can be implemented. The overarching issue is to avoid impact to the site in order to preserve those qualities for which the site was found eligible for inclusion in the National Register under criterion d. The Native Americans, including the Salinan and Chumash, have expressed their interest in this site as an important resource to their people that should be protected.

10. Protection of Visual Resources
The central coast of California is well-known for its many scenic qualities. That quality is best observed in the area known as the Piedra Blanca Rancho and its' surrounding landscapes ranging from the Santa Lucia Range to the Pacific Ocean. The once pastoral setting at the Piedras Blancas point has witnessed many dramatic changes in its 130 years of contemporary occupation. The romantic sight of a late 19th century Light Station has all but disappeared. The removal of the Victorian-era keeper's quarters, replaced with utilitarian, military-style housing and outbuildings has changed the historic face of the Light Station. What remains of the viewshed, however is dramatic. Wide-ranging vistas, complemented by natural features such as the Outer Islet, and the Piedras Blancas Rocks to the South draw attention away from the many modifications to this landscape. Protecting those vistas is a key element of this plan. The current access route into the site detracts from the viewshed to the west, looking out towards the Light Station from State Highway 1, as does the existing above-ground powerline.

11. Site Security
Site trespass has been an on-going issue since the Coast Guard left the site in 1975. Occasionally, curious visitors to the central coast hike onto the site from either the North or South beaches. With the acquisition of the former Hearst properties by the State of California, the trespass issues are expected to increase. The site is currently protected by a barbed wire boundary fence, and a key pad-controlled, photovoltaic-powered electric gate, located just off State Highway 1. "No trespass" signs are posted on the ends of the boundary fence, at the entry, and along a portion of the cliff(s) where much of the trespass has occurred in the past. There are staff concerns for vandalism to historic features and theft. Because of the remote nature of the residential and administrative facilities, there are some personal safety concerns among staff and residents.

12. Shoreline Erosion

Shoreline erosion is a natural process in this area of the Pacific coast due to the constant pounding of the surf on the shoreline geology. Piedras Blancas is somewhat protected from wave action by the presence of the Outer Islet which buffers much of the wave action that would otherwise take more of a toll on the shoreline. However, certain areas, specifically on the North side, opposite the Fog Signal Building, and on the South side, under the water storage tank pad just west of the old Wharf have seen recent erosion as a result of El Nino and other climatic events. Human activity has taken a toll on the site along the cliffs where trash and other dumping took place historically. These areas have suffered from vehicles backing up to the edge to discharge loads and weakening the soil structure, followed by rain, wind, or seismic activity.

B. Constraints

The lands adjacent to the site (on the east boundary of the site) are owned and managed by the California State Department of Parks and Recreation. Adequate access rights through those lands to the site or to a new a potable water source for the Light Station must be acquired from the State of California. To the maximum extent practicable, BLM management actions must comply with guidelines established by the California Coastal Commission as well as guidelines set forth in the San Luis Obispo County North Coast Plan. The waters surrounding the Point are under the jurisdiction of the Monterey Bay National Marine Sanctuary (below mean high tide) and the State of California. Point Piedras Blancas is a prime communications site for county, state, and federal public safety and resource agencies in the area. Thus, BLM management actions should provide for the continuation of such communications. BLM's management actions shall comply with the procedures established in the National Historic Preservation Act, National Programmatic Agreement with the Advisory Council and SHPOs, State Protocol Agreement with the SHPO and applicable Federal statutes.

PART III THE PREFERRED ALTERNATIVE

Close up view of the top of the light house circa 1932.

PART III. THE PREFERRED ALTERNATIVE

This Management Plan establishes BLM's vision and direction for the stewardship, restoration, and management of the Piedras Blancas Light Station. This "preferred alternative" is focused on a restoration scenario that would return the Light Station, to the extent possible, to what it would have looked like during the period of its greatest historic significance (1875 and 1940). This alternative would commit BLM to reconstruct, preserve and interpret the Piedras Blancas Light Station during that period. This alternative identifies corrective actions and restoration goals, while providing guidance for resource protection and managed use by the visiting public. The goals identified in this section address the concerns and constraints identified in Part II. Lastly, this plan identifies actions necessary to provide access not only for the visiting public, but continued access for research efforts currently underway and for those that may be proposed in the future.

A. Mission Statement

The following mission statement captures the essence of BLM's goals at the Piedras Blancas Light Station:

"Manage and restore the Piedras Blancas Light Station to a period in its history when the site played a significant role in the protection of central California maritime activities. In addition, preserve and protect the natural, historical, and cultural resources of the site while providing opportunities for compatible scientific, cultural, social, and interpretive activities for the benefit of present and future generations".

B. Management Guidelines for Resources and Other Programs

1. Restoration/Reconstruction of Historic Structures

The Piedras Blancas Light Station exhibits some of the most unique historical architecture found in lighthouses and their related structures, on the west coast. Historically, the U.S. Lighthouse Service made a regular practice of re-utilization of "standard" plans when it came to constructing new lighthouses. At Piedras Blancas, however, the Service deviated from that practice. Incorporating a combination of Romanesque Revival, Neoclassical, and Gothic features into the design, the lighthouse at Piedras Blancas was truly unique. The fog signal building also departed from conventional practices and this brick masonry and timbered roof truss-equipped structure exhibits many unique design features that were not employed in earlier or later buildings of the same type and function. Other structures, such as the barn, watch room, paint locker and keeper's triplex were copies of structures located at other sites. The overall effect created a unique architectural collection that stands alone in its beauty and functionality.

a. National Register Properties

The stabilization, maintenance and restoration of historic features located on the Light Station would conform to the ***Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68).*** This set forth standards for preservation, rehabilitation, restoration, and reconstruction, by private and government entities alike. These Standards would be adhered to as closely as possible during the planning, restoration and management of all historic features found on the Light Station. In 1991, the National Park Service nominated Piedras Blancas for inclusion into the National Register of Historic Places. The site's period of greatest historic significance was determined to be 1875 to 1940. This period would help to define the degree to which site's restoration and/or historic reconstruction would occur. Within this framework the following features and structures would be restored or reconstructed to provide an accurate representation of what Piedras Blancas looked like in its early years: (Listed in priority order).

Lighthouse (contributing):

The U.S. Lighthouse Service made effective use of standard lighthouse designs. Many lighthouses such as Pigeon Point lighthouse, north of Santa Cruz, California, and Yaquinta Head lighthouse at Newport, Oregon are essentially the same design with minor modifications made to conform to the individual site. In the case of Piedras Blancas, however, the plan used to construct the lighthouse was unique, due, in part, to the unusual site location, and therefore, it was used only once. The design elements were so dramatic, that even after the original lantern room, watch room and gallery were removed in 1948 the resulting truncated structure's remaining blend of architectural features still qualified it for listing in the National Register.


FUNCTIONS:
1 BLM Administration
2 Maintenance
3 Visitor Contact
4 Tour Bus Parking
5 Visitor Parking
6 Tour Bus Drop-off
7 Transient Residence
8 Sales
9 Shuttle Bus Drop-off
10 Public Restrooms
11 Handicap Parking
12 Research Viewing (USGS)
13 Septic Drainfield
14 PACJET Project (US Weather Service)
15 Volunteer Coordination
16 Shuttle Bus Parking
17 Temporary PBLS Association Support
18 Temporary California State Parks Law Enforcement
19 Trails (Initial Rough-in)
20 Interpretation
21 USGS Researcher Residence
22 Staff Restrooms
23 Special Events
24 Visitor Support / First Aid
25 US Geological Service Office
LEGEND:
Indicates unchanged location of function from previous phase of development
Indicates changed location of function from previous phase of development
KEY FEATURES
A Fog Signal Building stabilized
B Fuel Storage Building reconstructed
C Fuel Oil Building stabilized
D Boat House removed from site
E Site open to public visitation on scheduled weekends
F Generator & Laundry Bldg. reconstructed for power distribution center w/generator
G Trails surfaced
H Move entry gate at Hwy 1 further from highway and provide overflow parking w/site information/orientation
NOT PROVIDED IN THIS PHASE
9 16 21 24
Fog Signal Building
Communications Tower
Fuel Oil Building
Fuel Storage Bldg.
Light House
Pump House
Staff and Researcher Housing
1960 RESIDENCES
Administration, Research, and Volunteer Offices
Bureau of Land Management
State of California
Historic Entrance Road Alignment
Entrance Road
Property Line
Fence
0 100 200 400 Feet
Phase 1 of Development
IMPLEMENTATION PLAN
BLM, National Science and Technology Center
Piedras Blancas Light Station, Bakersfield Field Office

A current photo of the iron circular staircase that lines the inside wall of the lighthouse.

Action: Stabilize and restore the lighthouse's existing features and reconstruct the (missing) 4th landing, watch room, and lantern room (top of the lighthouse). Focus initial efforts on materials testing including structural cast iron (stair system) and masonry components. Initiate engineering actions to correct structural deficiencies in original design. Reconstruct the missing 36 feet of the lighthouse, and repair or replace all masonry or ornamental cast iron components needing attention. Repaint structure to match historic color scheme.

Fog Signal Building (contributing):

Constructed in 1906/07, this building housed the fog signal, an essential aid to navigation and the last of the original maritime safety apparatus installed at Piedras Blancas. The building is an un-reinforced brick masonry structure with decorative wooden truss roof system. This structure occupies a prominent spot at the Light Station and would be a key feature in the site's interpretive effort.

Action: Stabilize and restore the structure to its original appearance and adapt as a multi-purpose use and interpretive asset. Repair existing brick masonry damage. Restore/replicate windows/doors. Restore/repair wooden roof truss assemblies/roof rafters and planking. Remove/replace existing concrete floor to meet ADA requirements. Remove and replace roof covering/re-establish roof ventilation. Remove lead-based paint and other contaminants from structure including diesel/kerosene fuel spill under building. Establish moisture control/lighting system for structure. Repaint structure to match historic color scheme.

Fuel/Oil House (contributing):

This structure is unique in that it was one of the first steel reinforced ferro-cement structures built by the Federal government on the west coast. Constructed in 1906-1907, this feature housed the kerosene fuel used by both the lighthouse lantern and the engines that powered the fog signal.

Action: Stabilize and restore the fuel/oil house to its original appearance in order to interpret its role as an Aid to Navigation support feature. Remove lead-based paint and other contaminants. Stabilize and repair existing walls/window/fuel loading port. Remove existing wood-framed roof and replace the original concrete, hipped roof element. Reconstruct original sliding steel security door. Repaint structure to match historic color scheme.

b. Restoration/Reconstruction and Adaptive Reuse of Missing Features:

Many of the historic features at Piedras Blancas were razed or moved off of the Light Station prior to the National Register assessment. Most were declared surplus to the needs of the Service due to un-serviceability or displacement by

more contemporary structures or (changed) mission requirements. However, during the period of the site's most historic significance, these features played a key role in day to day operations and they are considered necessary for the proper interpretation of life and activities at the Light Station. Piedras Blancas is a small site with little in the way of infrastructure to support daily operations. This lack of space will become more acute as visitation and other site activities increase. Re-use of existing, or reconstructed features provides an acceptable alternative to developing new, contemporary construction that would be incompatible with the site's historic character. There are several structures (non-contributing) on the Light Station property that did not contribute to the National Register listing even though they meet the 50 year age criterion. These facilities are complementary in nature and some have potential roles in the Light Station's future operational scenario:

Tank Storage Building:

The Tank Storage Building was constructed in 1935 and replaced the aging redwood water tower and storage tanks built as part of the water catchment system constructed in 1909/10. This "new" structure was built to support the (then) recently-developed water source and delivery system, located on the (former) Hearst property the same year. The structure currently houses the site's water storage and treatment systems.

Action: Restore the building's exterior facade to its 1935 appearance while retaining its current functional role as the water treatment and storage facility for the Light Station. Remove lead-based paint and other contaminants. Repair structural deterioration to the floor and foundation systems. Re-roof and reinstate ventilation for building. Remove existing, external main electrical load center and relocate to new structure. Repair siding and repaint structure to match historic color scheme.

Fuel and Storage Building:

This structure originally constructed in 1876 was considerably modified in 1935, 1955, and 1960. It was originally used to store the Triplex occupant's personal effects and coal supply for the cooking and heating stoves. In 1935 it was expanded on the west and east ends to serve as an office and shop space for the site.

Action: Reconstruct building using historic design features and materials to replicate historic building features. Adapt the structure for use as the Gift Shop and offices for the Piedras Blancas Light Station Association (PBLSA).

Laundry:

The site laundry building was an 8' x 12' wood-framed structure constructed circa 1910 to serve the domestic needs of families and individuals stationed at Piedras Blancas. It was demolished in early 1960. The Light Station's electrical distribution system does not meet National Electrical Code standards, and has suffered from salt-laden, moist air which has corroded the components to a state of unreliability. There is no emergency power source to power the aid to navigation during power outages.

Action: Reconstruct the laundry building in its original location and adapt for use as the main electrical distribution system for the site to provide reliable electrical power and emergency back-up power to the Light Station.

Watchroom:

This structure played a key role in the operation of the Light Station. It was used by keepers on duty or "watch" while manning both the lighthouse and/or the fog signal. It was removed in 1960 by the Coast Guard and sold locally. It now sits on a ranch adjacent to the Light Station, and is integrated into another building. Returning it to the Light Station is highly unlikely, both from a practical and engineering standpoint.

Action: Reconstruct the watchroom, a key structure related to the Light Station and one of the primary features that supported the Aid to Navigation. This structure would serve two purposes: 1) to act as on-site administrative spaces, and 2) with proper furnishing, serve as an example of period site administrative offices/historic watch room. Use of this space would offset the loss of administrative spaces displaced with the loss of the site's current administrative facilities.

Keeper's Triplex:

This structure was, for many years, the principle keeper's residence for the Light Station. Constructed in 1876, the Triplex housed all three of the light keeping families, until 1906 when the head lightkeeper's house was built. The structure was demolished and replaced by new housing in 1960.

The keeper's triplex as it appeared in the early 1890's.

Action: Reconstruct the keeper's triplex for public interpretation and some administrative use. Reconstruction of this would complement the historic character of the Light Station's former Victorian housing.

Head Keeper's Residence:

The head keeper's residence was constructed in 1906 and served this role until construction of the new housing units in 1960. The original house, now privately owned, was sold and transported to Cambria, California where it has been restored and is being used as a vacation rental.

Action: Reconstruct the head keeper's residence for transitory residential use by research personnel, visiting staff and others. Reconstruction of this feature would complement the historic character of the Light Station's former Victorian housing.

Barn:

The barn was constructed circa 1910, but does no longer exist.

Action: BLM would reconstruct the barn to serve as a multi-purpose facility for administration of the Light Station, volunteer office, group activities, educational programs, and/or special events.

Wharf and Warehouse:

The wharf, constructed in 1893, was the second landing constructed on that spot on the south side of the point. It served the tenders and supply ships used to resupply the site before the coastal highway was constructed. This feature was removed shortly after the end of World War II, long after its utility had ceased. BLM evaluated this feature and it was determined that the cliff-side where the structure was located was eroded to the extent that an accurate restoration would be costly, and would not be historically-accurate due to relocation of footing elements. There would also be the potential to land unauthorized watercraft at the wharf which could compromise site security, and pose a potential safety hazard. A wood-framed warehouse was constructed to provide storage for durable supplies next to the wharf. However, since the wharf would not be reintroduced, it would put a reconstructed warehouse into a non-contextual setting.

Action: BLM would not reconstruct these features.

Water Tower, Rain Catchment and Water Storage System:

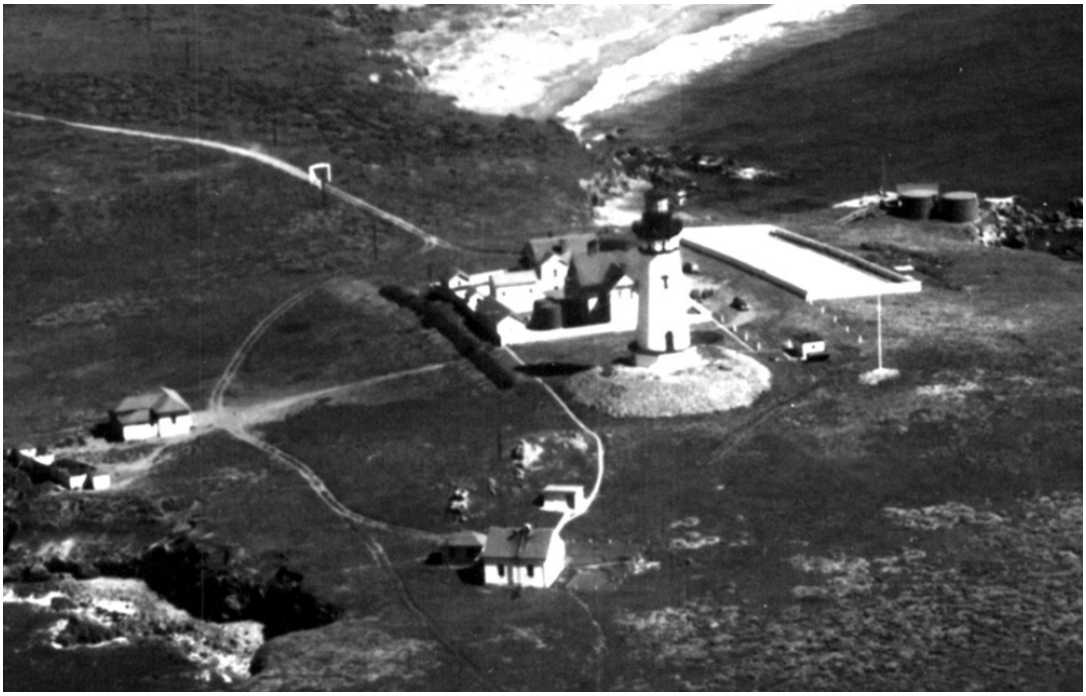
This system was designed and constructed circa 1910. The purpose was to augment the site's critical water supply problem. Prior to its installation, water was hauled from as far away as San Luis Obispo, California. Wells drilled on-site proved to be brackish and were frequently the cause of water-borne diseases that incapacitated the site's residents. Construction of this system hoped to capture rainwater in a 60' x 200' concrete rain catchment. This water would then be gravity-fed down to two forty thousand gallon redwood water storage tanks. The water was then pumped from the wharf pump house, located on the east side of the warehouse, via a 4" steel pipeline, to two ten thousand gallon water storage tanks mounted on a redwood tower (where the current tank house is located), and from there, distributed to the two residences and other locations. The system had limited success, due mainly to the lack of reliable rainfall. During some years little or no rain was experienced, rendering the system relatively useless. It appears from old photos that at some point in the late 1930's-early 1940's, site personnel installed basketball equipment on the catchment, and thus, elevated it to its highest and best form! The system was disabled in 1934-35 and a spring, which currently services the site, replaced it. The Coast Guard had the catchment removed in 1959 to make way for the new housing that now occupies the site.

The rain catchment area (rectangular slab) is clearly seen in this old photo, along with the wharf.

Action: BLM would not reconstruct these features. However, use of the remaining water storage tank pads for interpretive view points would be considered.

2. Historic Landscape

The historic landscape at the Light Station dates back to the mid-1890's when grass was planted in front of the lighthouse, presumably to keep dust and dirt under control and to beautify the lighthouse grounds and entry. Photos taken in 1894 (Bamber) show a grass ground cover. Species type is unknown however photo illustration shows what appears to be a rough type of grass, such as Bermuda, covering the area. In 1932, Keeper Norm Francis planted a row of Monterey cypress on the north side of the keeper's dwellings and the lighthouse to provide protection from the wind. Over the years, during occupation by the U.S. Lighthouse Service, and later the U.S. Coast Guard, the windbreak was well-maintained. In the interval between the Coast Guard abandoning the site in 1975 and the subsequent return to BLM management, the windbreak was allowed to grow, unchecked. The trees "flagged" and sent growth out as much as 30 feet to the south. Lack of maintenance caused the top-heavy trees to uproot and it appears that the original windbreak cannot be saved. Large dead areas have not in-filled and the rocky soil needs considerable work to make the growth medium more conducive to healthy development.



The Monterey cypress windbreak can be clearly seen on the north side of the residence area in this 1939 aerial photo.

Action: Restore selected elements of the historic landscaping at the Light Station. Re-grade front of lighthouse to match its 1890's configuration and appearance. Remove and replace the Monterey Cypress windbreak. Initiate a replanting program to replace dead, downed and climax-growth trees to reestablish the historic windbreak. Residential Landscape: Use plants that do not have the potential of escaping into native habitat. Screen all proposed ornamental/landscaping plants. Inspect any and all plants to be introduced to the site for non-native slugs, snails (including the introduced predatory species), and other detrimental invertebrates or insects.

3. Public Visitation at the Light Station

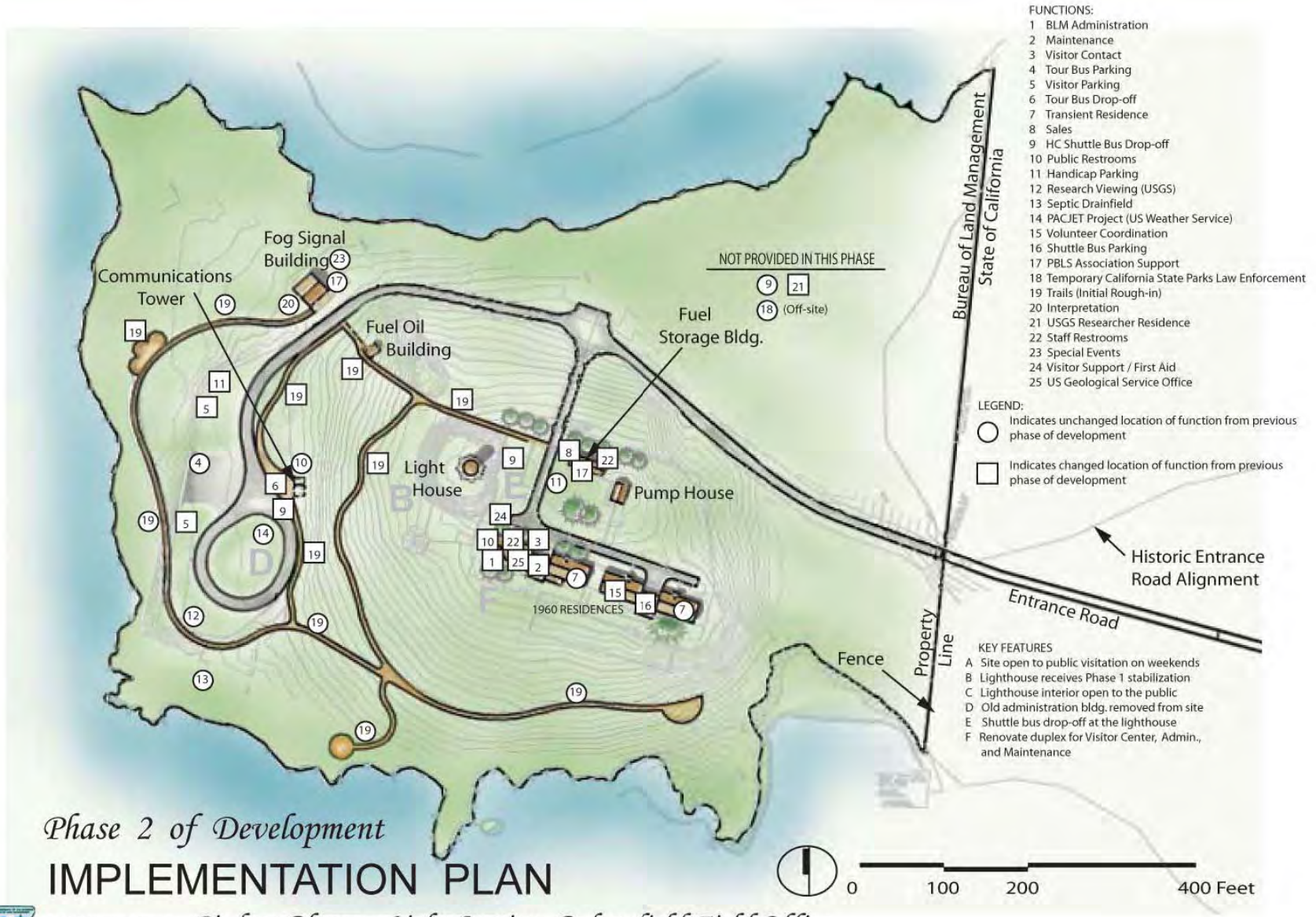
a. Tours and Public Access

Action: Allow for public visitation to the Light Station, limited by the constraints of the facilities and the Light Station Mission Statement. Visitor use could be 25,000 ± visitors/year. Consider allowing walk-in public visitation during business hours if a parking lot on or near the Light Station is developed. Visitation to the site may be limited during periods of inclement weather or critical research efforts to protect visitors, staff and sensitive resource and cultural features. Open houses and special events may be held for fund raising efforts and would be managed by the Piedras Blancas Light Station Association, working under BLM visitor and access guidelines. Visitors would be charged a Standard Amenity Fee as authorized by the Federal Lands Recreation Enhancement Act (REA; Public Law 108-447) of 2004. The Federal Lands Recreation Enhancement Act (REA) was enacted December 8, 2004 (REA; PL 108-447, Section 804), and provides Federal land-managing agencies with long-term recreation fee authority. It specifically authorizes these agencies, including the BLM, to reinvest recreation fees at the local recreation sites where they were collected to benefit visitors through enhanced facilities and services.

b. Public Use Guidelines

Supplementary rules were enacted by BLM shortly after the Light Station transferred into BLM jurisdiction, in order to control visitor use and conserve the natural and cultural resources present. These rules were published in the Federal Register on April 15, 2002 in Vol. 67, No. 72 under the authority of 43 CFR 8365.1-6 and 43 CFR 8341.2(b). These rules are shown as an appendix in this Plan (copy of Federal Register Notice).

Action: Manage public use of the Light Station in keeping with the constraints of Public Land Order 7501. Continue the supplementary rules and modify as needed. Any fees charged to members of the visiting public for admission, tours, gifts, etc. would be reasonable, and would conform to BLM rules and regulations. As much as possible, fees coming to BLM from admissions, tours, gifts, etc. would be used for the restoration and administration of the Piedras Blancas Light Station.



Phase 2 of Development

IMPLEMENTATION PLAN

BLM, National Science and Technology Center

Piedras Blancas Light Station, Bakersfield Field Office

A BLM docent leads a public tour of the Light Station in 2006.

c. Interpretation and Education

The Piedras Blancas Light Station is a significant set piece in the State's maritime story. Interpreting the rich history that evolved here would help visitors to not only understand the role the Light Station played in maritime safety and commerce, but would also acquaint them with the unique assemblage of natural and marine resources found at this site. Interpretation increases visitor awareness of and develops a greater degree of appreciation for the diverse resources base found here. A clear idea of what the site's management goals hope to accomplish would instill in the visitor a greater appreciation for and interest in the protection and preservation of this site.

Action: Communicate the value of the site's resources and values in the interpretive program. Incorporate the following unifying theme, along with the following additional themes, into interpretive events, tours, webpage, and educational materials.

Unifying Theme: Piedras Blancas has been a home to indigenous people and a landmark for sailors plying the waters along the central coast. It is a rugged landscape that has attracted a diverse group of individuals and groups throughout the years. It is a convergence area for both marine and terrestrial plants and animals including seasonal events such as the annual northern migration of the gray whale. The Light Station was manned by hardy light keeping families and has served the country well, as a beacon to mariners and guardian of the central coast.

Additional Themes:

- Safeguarding California: The Light Station has safeguarded sailors and provided support facilities for both civilian and military uses during the Cold War era.
- Shaping Culture and Politics: The gold rush and California's statehood were factors that contributed to more ships plying the West Coast, which resulted in more shipwrecks. With increased shipping, a lighthouse was needed at Piedras Blancas.
- Location is Everything: The setting for the Light Station was determined by the site's purposes and the unique natural characteristics of Piedras Blancas. The Light Station was designed to be visually noticeable.
- Impacts of Technology: Changes in technology resulted in the closure of the active duty component at the Light Station.
- Life at Piedras Blancas: The Light Station was an isolated outpost that presented special challenges for the people who lived and worked there.
- Protecting the Environment: The natural resources at Piedras Blancas are vulnerable to environmental changes and human actions and require special efforts to protect them.
- American Indians: The indigenous people of Piedras Blancas were the land's first stewards. Today the Native Americans acknowledge the importance this promontory played in the history to their people and culture.
- Early Times: Rancho Piedra Blanca's early history, from the first Spanish explorers to its ranching roots, is a captivating story. Piedras Blancas Light Station reflects Californians' increasing interest in their heritage resources.
- Preservation for the Future: Preserving our history for future generations is an on-going effort.

In addition to the interpretive themes, the following specific interpretive and educational actions would be pursued.

A school class gets a tour of the Light Station.

Action: Expand interpretive and educational opportunities for both on- and offsite visitors of all abilities. Identify interpretive opportunities for self-guided tours, lectures, signage, brochures, and other media for Piedras Blancas Light Station. Ensure all brochures, printed material, web sites, etc. reflect all of the Light Station's resources and values. Develop accessible facilities to serve the disabled visitor throughout the Light Station, including traffic circulation,

exhibits, signs and publications, and tour accommodations. Consider innovative technology to reach visitors, especially those off-site. Ensure that programs and publications for school children are compliant with the California State Standards.

Action: Develop exhibits and displays that inspire the sharing of thoughts, ideas and memories, especially by those who lived and worked at the Light Station. Include opportunities for visitors to enhance their experience by engaging in conversation about the exhibits, thereby expanding the collective knowledge about the sites and the eras in which they operated. Enhance the visitors' experiences by forging a connection between visitor interest and displayed artifacts.

Action: House artifact collections at a Federally-approved curation repository off-site in the region. Per curatorial agreement, BLM will temporarily borrow and exhibit selected artifacts in the collection at the Light Station. Consideration is also given to displaying replicated artifacts in exhibits and for using them for public education and awareness of prehistoric and historic resources. Establish an appropriate museum environment, period displays, and formal exhibits in selected Light Station buildings, pursuant to 36 CFR 79. Develop furnishing plans for selected buildings that emphasize their specific historic period.

Action: Maintain and provide support for BLM volunteers and cooperating associations at the Light Station. Provide volunteer program management, training, evaluation, and support. Expand training for current and future volunteers to include the entire site. Design volunteer recruitment material that reflects the interpretive vision for the Light Station as a whole, and make it available through public displays. Use the internet to inform the public of volunteer opportunities. Provide meeting space for cooperating associations. Maintain a positive and supportive partnership with cooperating associations that support the site's volunteer program and restoration activities.

Action: Develop educational partnerships and collaborative exhibits with the MBNMS, CDP&R, and other interested partners. Expand training for staff and volunteers to include information about the MBNMS and CDP&R and their programs.

Action: Designate the Light Station as a gateway and interpretive node for the California Coastal National Monument. Incorporate information on the National Monument into public tours and interpretive messages at the Light Station.

d. Merchandising

The BLM signed an Assistance Agreement with the newly-formed Piedras Blancas Light Station Association in June, 2004. The Association's primary role is to support the BLM efforts to restore the Light Station through fund-raising activities such as special events, grant proposals and gift shop sales.

Action: Empower the Association to be the responsible entity for arranging and/or negotiating merchandising activities on the Piedras Blancas Light Station. Profits from sales activity would be used to augment the site's restoration/operations funding. The Association would manage special events such as fund raisers, reunions, weddings, photo shoots, films, and other "for fee" activities approved by BLM. Events conducted by the Association would be managed in such a way to protect the Aid to Navigation, the site's natural resources, prehistoric resources, and historic resources and restoration efforts.

4. Realty Actions

a. Land Tenure

Based on the restraints in Public Land Order 7501, the Light Station would be retained in United States ownership under the jurisdiction of BLM.

b. Easement Acquisition

Access Easement

Action: Acquire access rights on a corridor between the Light Station boundary and the nearest public road. The new access easement or license must allow for administrative as well as public use, must be of sufficient width to meet BLM and public access needs, and must be controlled by BLM. Traffic safety should be a prime factor in the location and design of the access. The exact route would be determined in a future route analysis, as described in BLM Manual Handbook H-2100-1, Chap. IV. This route analysis would consider safety, flora and fauna, engineering and maintenance needs, soils and geology, historic or cultural constraints, and legal constraints.


A portion of the historic access route had a trestle over the sands.

Water Supply Easement

Action: Acquire water supply conveyance rights on a corridor between the Light Station boundary and a nearby spring or water source. Maintain the current water source to current standards and use for fire protection and other non-consumptive uses, such as landscape maintenance. The new easement or license should be of sufficient size to meet BLM needs, should allow for vehicle access for maintenance purposes, and should be controlled by BLM. Water quality should be a prime factor in the location and design of the new easement/license. The exact route should be determined in a future route analysis, as described in BLM Manual Handbook H-2100-1, Chap. IV. This route analysis should consider safety, flora and fauna, engineering and maintenance needs, soils and geology, historic or cultural constraints, and legal constraints. BLM would acquire an appropriative water right from the State of California for all water use.

c. Utility Easements

Action: BLM would investigate the possibility of relocating the existing utility line underground between State Highway 1 and the Light Station main electrical panel. Consider alternative sources of power or communication, such as solar, wind, etc., and satellite communications.

d. Public Benefit Communications Facility and Other Rights-of-Way

In July, 2005, BLM completed the design and installation of a new communications vault and 40' tower on the east side of the Administration building. This facility accommodates communication equipment for the State of California, the county of San Luis Obispo and the U.S. Weather Service. Communication site rights-of-way have been issued to these entities by BLM, and maintained using a fee system established to pay for maintenance and upkeep of the facility.

The communication facility as seen from the base of the lighthouse in late 2005.

Action: Maintain the existing authorizations for communication site rights-of-way until technology and/or economics provide a viable alternative. Consider new applications on a case-by-case basis, with constraints due to space and in keeping with BLM's Mission Statement for the Light Station. The Light Station is designated as a right-of-way avoidance area. Do not authorize use for commercial communications purposes, such as radio, television, and cellular phone uses. No right-of-way corridors are proposed on the Light Station.

e. Aid to Navigation

Action: Maintain the existing right-of-way authorization to the Coast Guard for the Aid to Navigation (lighthouse light). Provide a full-time capability to man and maintain the beacon using staff and volunteers trained to maintain the Beacon and its related equipment. Provide maintenance and operations training to staff and volunteers.

f. Short Term Permits for Various Uses

Action: Short term uses and special events would be considered by BLM on a case-by-case basis with consideration toward ongoing operations, the restraints within Public Land Order 7501, and the BLM mission statement for the Light Station. Such activities would require a permit from BLM, most likely a land use permit (2920 permit) or a special recreation use permit (SRUP). The appropriate fees and/or bonds for such permits would be required of the applicants. Uses that could be authorized under such permits would be research projects, photography/filming, and organized group event activities such as weddings, family reunions, conferences, etc. In general, commercial use at the Light Station would be discouraged. Any permit issued would authorize and define specific site uses, in order to protect natural and cultural features at the Light Station. Restrictions similar to those shown in Appendix B (Special Rules for the Piedras Blancas Light Station) would be incorporated into the permit, along with others deemed appropriate by BLM.

5. Infrastructure and Administrative Facilities

a. Administrative Facility
The current administrative facility, located in the old Mobile Instrumentation Station (MIS) is not safe. The current building design and 1960-era infrastructure are not configured for the current mission. There are no ADA-compliant design features in the existing structure, and both the Boat House and MIS detract from the historic view shed. In addition the pre-engineered metal framework is heavily corroded on the north side of the structure to the extent that it would require replacement. The siding is a non-friable, corrugated, asbestos/concrete paneling.

Action: Remove the MIS and Boat House. Relocate administrative spaces to reconstructed buildings on-site. The new facility would provide space for site management activities including administration, maintenance, research and storage, be ADA compliant, and energy efficient.

b. Housing
The original keeper's triplex and the head keeper's residence housed essential personnel needed to maintain the aid to navigation. In 1960 the U.S. Coast Guard replaced the aging Victorian-era housing with four contemporary concrete block residential units. These units have been determined to be unnecessary for full-time occupancy for either maintenance and operation for the Aid to Navigation and/or for site security purposes.

The current housing units on site are pictured in this October 1960 photo, soon after construction.

Action: Remove existing housing as residency and administrative needs are moved to reconstructed buildings on site.

c. Parking/Interior Circulation
Parking space is limited and is currently located west of the lighthouse, near the communications site. The current parking area impacts the viewshed and is too remote for visitors with limited or non-ambulatory conditions to access the historic core of the Light Station. This area is best-suited to accommodate tour buses and handicapped parking. Public parking facilities would be best accommodated off-site, possibly in cooperation with the California Department of Parks and Recreation, off State Highway 1, near the Piedras Blancas Motel.

Action: Provide adequate parking to accommodate tours, disabled, and staff parking. Parking would be located to minimize impacts to cultural, viewshed, and natural features and would ensure protection of marine mammals and ocean resources. A new parking area would be constructed, on-site or immediately adjacent to the Light Station to the east of the site. ADA-compliant trails would be designed to lead visitors to the site from both the main parking area and from bus parking. The existing internal road alignment would remain essentially unchanged. Upgrade the existing road within the Light Station to accommodate vehicles weighing up to 45,000 GVW (tour buses). Design road and parking system to minimize conflicts between pedestrian use, research, and other daily site management activities. Avoid or minimize impacts to sensitive natural and cultural resources values.

d. Trail Development

The viewshed surrounding the Light Station is outstanding. The vistas change with each step taken. However, the presence of cultural resources and dense native vegetation make movement around the site difficult. The site offers unique viewscapes not normally accessible under present circumstances. Protection of cultural and natural features would heavily influence trail placement and design as would the need for ADA-compliant surfaces and grades.

Action: Design and install a new, ADA-compliant interpretive trail to take advantage of the site's natural wonders, and developed around the periphery of the site. The trail would also protect visitors from approaching the unstable cliffs that bound the site, where shear drops of 30 feet are present. To prevent this, location and vegetative cover would be factored into the design effort to deter random or unauthorized pedestrian traffic around the site.

e. Sanitation

The existing sewage system was redesigned and constructed in 1984. It is failing and the current leach field and septic tank cannot handle the current and anticipated load. Alternative disposal methods may be explored in lieu of excavating for expanded leach fields in order to protect cultural resource values and native plant communities.

Action: Maintain the current system with no plans to expand it. The design of new structures and facilities at the Light Station would anticipate this limitation in order not to overload the system. New public restrooms would utilize emerging technologies instead of traditional methods of waste disposal. Trash would not be disposed of on-site, but would be removed and disposed of at an approved waste disposal site.

f. Facilities Maintenance

The Light Station, like other coastal developments is subject to harsh weather, not normally experienced in other, milder climates. The presence of moist, salt air and high winds take their toll on iron, steel, and other metals. Mold is common and attacks painted surfaces, along with the moist salt air. Long periods of fog and overcast days keep surfaces moist, which encourages mold and dry rot on wood surfaces. Materials selection, hardware and methods of work are being reviewed and analyzed for those treatments and applications that would withstand the rigors of a harsh environment.

Action: Replace maintenance-intensive systems, protective finishes, hardware, and other sub-standard issues with sustainable replacements or improved practices.

g. Site Security

There are no available BLM law enforcement assets located near the Light Station. The California State Parks and Recreation law enforcement staff work in close proximity to the site, and are usually the first individuals to respond if an incident occurs on-site.

Action: Develop a law enforcement agreement with the California Department of Parks and Recreation and/or other local law enforcement organizations. This agreement would allow them to enforce State and Federal codes at the Light Station on an as-needed basis for law enforcement assistance and support.

6. Biological/Geophysical Research

Piedras Blancas has served as a site for marine, near-shore and other research activities since 1979. While there is site-dependent research still on-going , other research efforts have occasion to use the site's facilities, grounds, or for access to tide pool areas under the jurisdiction of the Monterey Bay National Marine Sanctuary. BLM established a research permit program in compliance within Department of Interior and BLM guidelines. At Piedras Blancas, the permits and fees, if applicable, are aimed at insuring site protection and recovering fees for upkeep and maintenance of facilities.

Action: Authorize biological/geophysical research associated with organizations such as the Monterey Bay National Marine Sanctuary, the National Marine Fisheries Service, Southwest Fisheries Laboratory, the Partnership for Intertidal

Studies of Oceans, the NOAA Pac-Jet Study, USGS sea otter studies, etc., as ongoing Light Station operations allow. Work with the MBNMS to develop a joint permit that would include permission to conduct research, and access through the Light Station, including stipulations aimed at the continued protection of site resource issues. BLM would evaluate future research proposals based on their site-dependent needs, the need for housing, and the need for administrative space (as available) on a case-by-case basis.

7. Native Plant and Animal Protection and Restoration

a. Native Plant and Animal Protection

The spectacular native plant and animal species assemblage is an important part of the Light Station. The native plants and animals provide opportunities for public enjoyment, education and interpretation, research and conservation.

Action: Design and undertake actions at the Light Station to avoid disturbing important wildlife use areas, such as marine mammal haul-outs and resting areas, and bird nesting and roosting areas. Design and locate facilities and activities to minimize disturbance to native vegetation and special status wildlife. Avoid activities that pose hazards to wildlife, such as placement of wires or cables in flight paths, uncontrolled pets, uncovered pits or trenches, release of ingestion or entrapment hazards, and harmful human activities. Develop interpretive and educational materials that contribute to the primary theme of "Protecting the Environment." Insure management actions do not introduce exotic plant or animal species to the site.

b. Native Plant Restoration

As a consequence of human activities, much of the native plant community at Piedras Blancas has been replaced by non-native species. Some of this was unintentional, but the Coast Guard's program of planting iceplant resulted in much

Volunteers removing iceplant at the Light Station.

native vegetation being replaced by this species. A side effect of the loss of native plant cover was the attendant loss of habitat for native animals.

Action: Remove iceplant and other problem weeds and reestablish appropriate native vegetation. Collaborate with the California Department of Parks and Recreation in controlling weeds and restoring native vegetation in the Piedras Blancas area.

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c. Sensitive Plant Species

Compact cobwebby thistle (*Cirsium occidentale* var. *compactum*) is the only BLM sensitive species currently found at Piedras Blancas. In 2001, only a single individual of this annual thistle was located, however, in 2005 approximately

200 mature plants were identified. The increase of this rare thistle appears to be the result of additional habitat restored by the ongoing removal of iceplant.

Action: Protect and propagate sensitive plant species at the Light Station. Continue existing management of compact cobwebby thistle and the restoration of native vegetation at Piedras Blancas. Evaluate restored areas to determine if the introduction of other sensitive species located within the growing range is appropriate. Evaluate sensitive species growing at Arroyo de la Cruz and other nearby sites for possible introduction to Piedras Blancas. For target species, facilitate establishment of new populations on the Light Station in such a manner as to minimize conflicts with site restoration and reconstruction efforts. Monitor habitat and rare plant populations where appropriate.

8. Cultural Resource Management

Protection of our cultural resources is fundamental to all actions undertaken at Piedras Blancas. The prehistoric and historic resources found are the focus of BLM's efforts to preserve and manage these resources for future generations. The following goals and actions would guide those efforts.

a. Prehistoric Resources

The Light Station was constructed on lands that had been used for centuries by Native Americans. BLM recently completed an archeological survey of the Light Station grounds. This effort was aimed at determining the spatial and depth of resources on the site and to complete an evaluation of the site pursuant to National Register criteria. Diagnostic artifacts and features were documented across the light station property during the study employing limited excavation and surface collection. Because there is written and archaeological evidence suggesting the Salinan and Chumash tribes may have occupied this site over time, this study coupled with future research efforts could help us better understand the

Testing for archaeological resources at the Light Station in 2006.

prehistoric functions of the site and perhaps which cultures overtime occupied the Point. BLM would protect site CA-SLO-77 during historical restoration, infrastructure repair, or new construction to ensure proper protection, mitigation and documentation of the site's components. BLM would coordinate with local Native Americans, pursuant to Federal acts, regulations, and policy per guidance in the BLM 8120 Cultural Resource Manual.

Action: Identify, document, protect, evaluate and preserve cultural components at the site. Incorporate measures to protect and preserve cultural resources in projects involving ground disturbance, permits, or Federal undertakings at the Light Station. Include protection, monitoring, and Native American coordination in our planned actions. Public access around the site would be designed to avoid or minimize impacts to CA-SLO-77. Light Station interpretive planning would emphasize protection and respect for prehistoric cultural resources. BLM would implement monitoring of culturally sensitive areas on the grounds routinely. Develop a Memorandum of Agreement with the State Historic

Preservation Officer on the treatment of prehistoric resources CA-SLO-77. Develop a protocol agreement with the local Native American community regarding site management, native plant gathering, ceremonial activities, monitoring and consultation.

b. Collections Management

The Piedras Blancas Light Station has acquired and would continue to systematically acquire collections of historic photographs, publications, uniform items, natural materials and cultural artifacts either directly or indirectly associated with the site when such items would enhance management objectives. The collection would require proper curation, management, preservation, storage, display, and protection for both collections at the light station and at an off-site repository. Any collection of artifacts at Point Piedras Blancas would be closely coordinated with archaeologists and would be implemented pursuant to professional archaeological standards.

A prehistoric chert biface unearthed at the Light Station during sampling in 2006.

Action: Provide professional-level collections protection and management for resources found at or assigned to the Light Station. Artifact acquisitions would be focused on items related to prehistory and history of the Piedras Blancas Light Station including later themes that represent the site's contribution(s) to national security during the Cold War era. Develop curatorial and storage space(s) for acquisitions to insure proper inventory, cataloging, accessioning, preservation, valid research opportunities, display and storage of acquired items. As design efforts for the new administrative facilities are developed, collections storage, research and curation would be considered in order to work on-site to develop educational and interpretive resources information from the collections. Any collection of artifacts at the Light Station would be closely supervised by BLM staff and curated according to current laws, guidelines and procedures. Collections management would conform to the U.S. Department of Interior's (DOI) "Museum Property Handbook", 36 CFR 79, 43 CFR 7, and the Archaeological Resource Protection Act.

9. Shoreline Erosion

Shoreline erosion continues to threaten certain areas of the Light Station, such as its North side, opposite the Fog Signal Building, and on the South side, under the water storage tank pad just west of the old wharf.

Action: Prevent or minimize accelerated shoreline erosion at the Light Station. Limit or cease activities/access in areas with extreme potential for shoreline erosion. Develop trails and other features away from cliff edges in sensitive areas. Remove iceplant from cliff areas and encourage appropriate native vegetation. Minimize impacts to cliff face during weed control and other restoration activities.

10. Soil Conservation

Due to the sandy nature of the soils at Piedras Blancas and the windy conditions during much of the year, wind erosion of the soils is possible if they are in a bare condition (unvegetated or uncovered) for extended periods of time.

Action: Avoid accelerated wind erosion of the soils at the Light Station. Protect large areas of bare soil during invasive plant removal and site development. Incorporate soil protection measures into site development activities.

11. Visual Resource Management

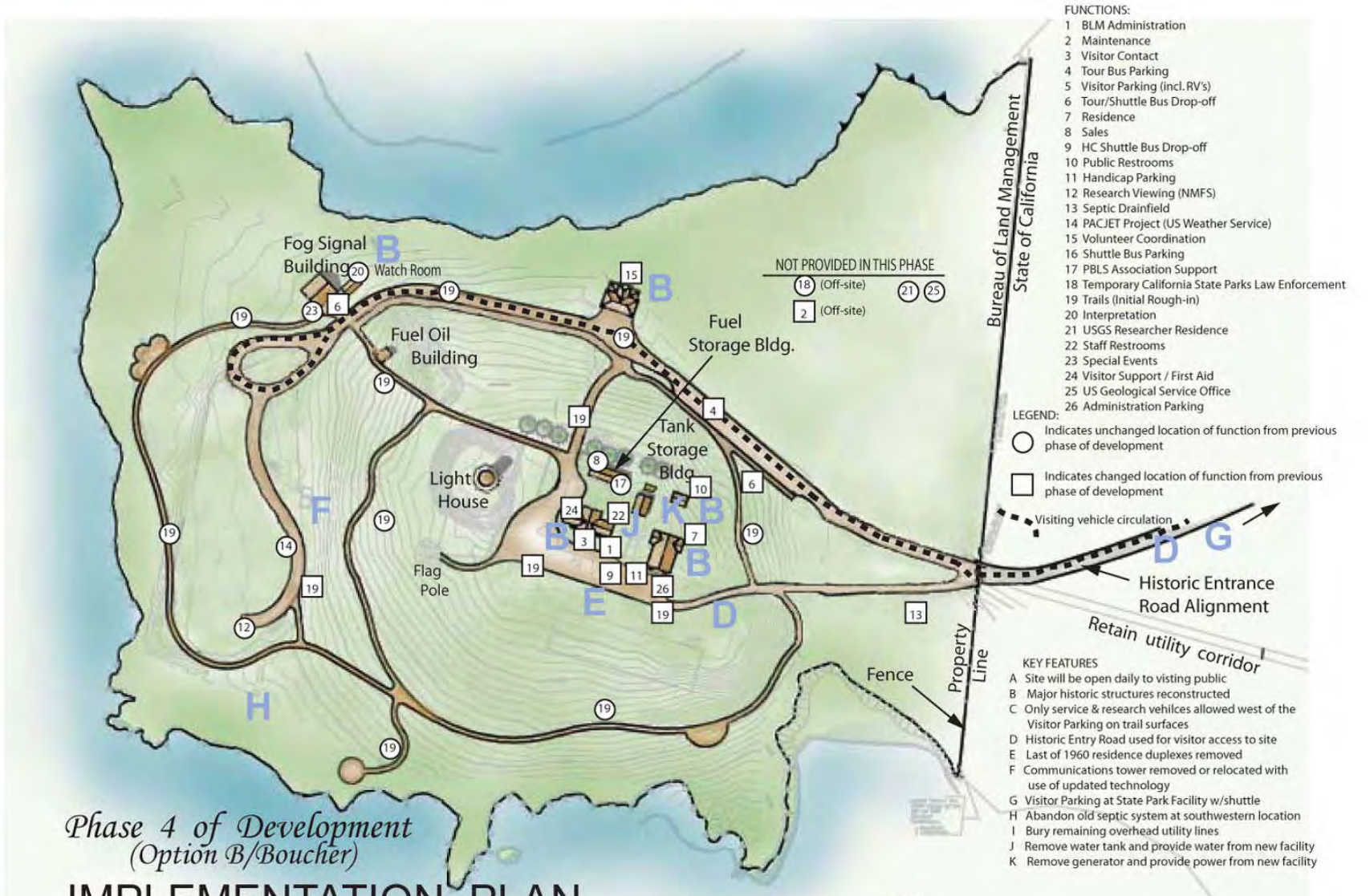
The current viewshed is a mix of historical and contemporary development, interspersed with magnificent natural vistas. The challenge faced by BLM is to balance the contemporary viewshed in a manner that would not detract from either the historic or natural viewshed on the site. Development over the years has dramatically altered the viewshed of the original Light Station. The historic viewshed is interspersed with Cold War and later additions to the site by the Coast Guard and the U.S. Navy to meet mission requirements for the time.

Action: Preserve and restore the historic viewshed to its period of greatest historic significance-1875 to 1940. Restore the natural viewshed including native plant communities that once existed on Piedras Blancas Point. Relocate incoming electrical service underground. Evaluate removal and relocation of the existing access road. Make the preservation of the historic and natural viewshed an important factor in the design for all reconstruction, rehabilitation, and new construction activities at the Light Station.

12. Implementation Schedule

Actions outlined in this plan would be implemented by BLM as funding and staffing allow. The general priority for implementation would be:

1. Health and safety issues.
2. Historic restoration/rehabilitation.
3. Public visitation.
4. All other actions.



Phase 4 of Development
(Option B/Boucher)

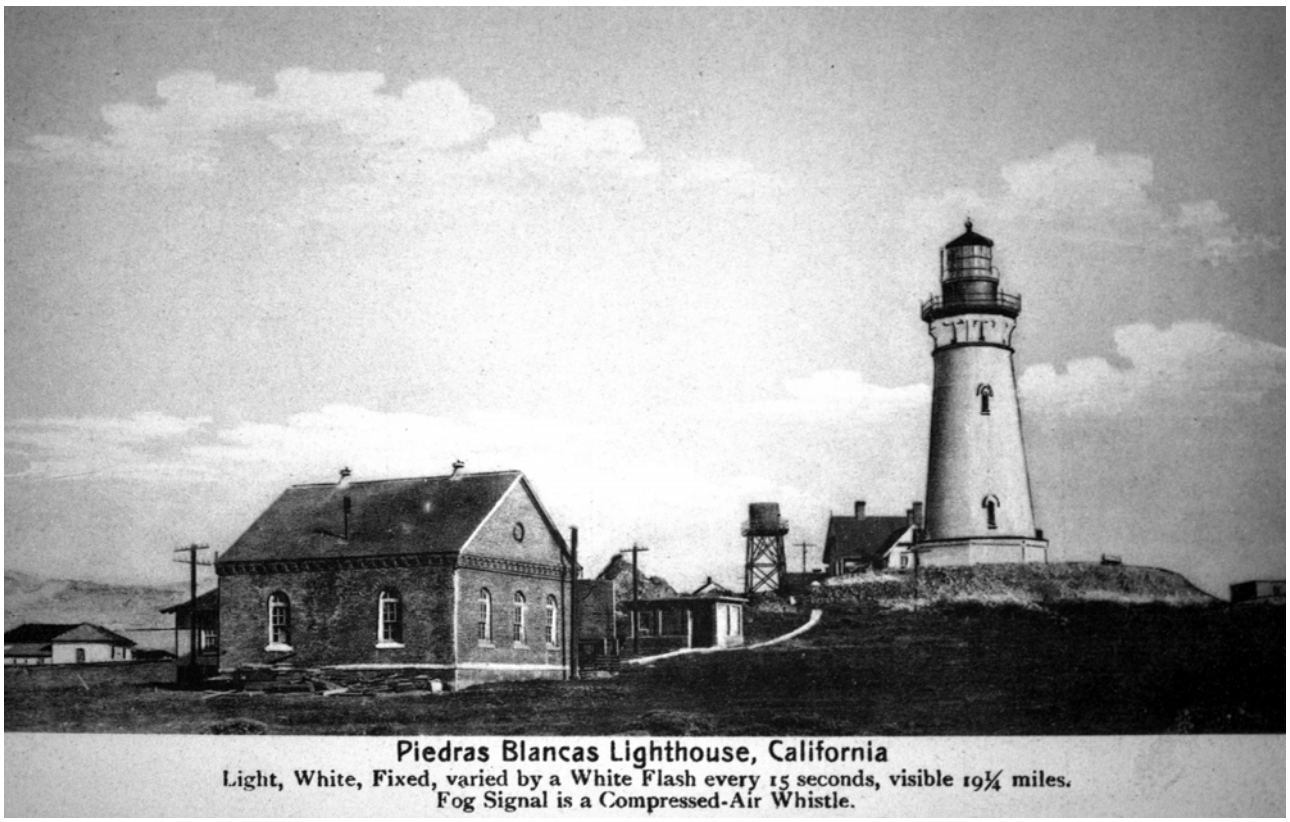
IMPLEMENTATION PLAN

BLM, National Science and Technology Center

Piedras Blancas Light Station, Bakersfield Field Office

February 2007

PART IV ENVIRONMENTAL ASSESSMENT FOR THE MANAGEMENT PLAN



A 1911 postcard featuring the Light Station.

PART IV. ENVIRONMENTAL ASSESSMENT FOR THE MANAGEMENT PLAN

A. Purpose and Need for Action

The purpose for action is to guide BLM in the future management of the Light Station in a manner that would meet public needs, and in accordance with current statutes and the directives contained in Public Land Order 7501. In general, we perceive that the public desires to visit the Light Station and see it restored, while maintaining as much of the natural setting as possible. This Plan is needed to maintain continuity and uniformity of management for a high profile, high-demand historic property. The Plan is also needed to provide orderly, well-thought-out management that would meet the public interest.

B. Description of the Proposed Action (the Preferred Alternative)

Refer to the Piedras Blancas Light Station Management Plan, Part III. The proposed action is to implement the actions described in that section of the Plan.

C. Description of the Alternatives

1. ALTERNATIVE #1 - THE NO ACTION ALTERNATIVE

Under this alternative, the Light Station would be managed in a state of arrested deterioration and very limited public use.

a. Restoration/Reconstruction of Historic Structures

No funds would be expended for stabilization or restoration of the Light Station features/structures.

b. Historic Landscape

The historic landscaping at the Light Station would not be restored.

c. Public Visitation at the Light Station

Tours and Public Access

No tours or public access would be allowed at the Light Station.

Public Use Guidelines

The existing supplementary rules dated April 15, 2002 would be utilized.....same as Preferred Alternative.

Interpretation and Education

No public interpretation/education would be performed at the Light Station.

Merchandising

Interaction with the Piedras Blancas Light Station Association would be minimized. Limited sales would take place at the Light Station, however merchandising may be pursued by the Association off-site. The Association would be allowed to conduct special events at the Light Station, but the number and size of the events would be limited due to the limited facilities at the Light Station.

d. Realty Actions

Land Tenure

Based on the restraints within Public Land Order 7501, the Light Station would be retained in United States ownership under the jurisdiction of BLM.....same as the Preferred Alternative.

Easement Acquisition

The existing access road and water supply line serving the Light Station would continue to be utilized. No new easements for road access or water supply would be pursued.

Utility Easements

The existing above-ground electric line that serves the Light Station would not be buried. Alternative sources of power or communications would not be pursued.

Public Benefit Communications Facility and Other Rights-of-Way
The existing authorizations for communication site rights-of-way would be maintained until technology and/or economics provide a viable alternative. No new applications would be considered. The Light Station would be designated as a right-of-way avoidance area.

Aid to Navigation
Maintain existing right-of-way to the Coast Guard for the lighthouse light, and continue operation of the light…….same as the Preferred Alternative.

Short Term Permits for Various Uses
Applications for short-term permits for miscellaneous leases, permits, and easements for various uses would be considered and adjudicated by BLM on a case-by-case basis……..same as the Preferred Alternative.

e. Infrastructure and Administrative Facilities

Administrative Facility
Use and repair the existing administrative facility and boat house.

Housing
Use and repair the existing housing units.

Parking/Interior Circulation
Use and repair the existing roads and parking areas.

Trail Development
A new trail system within the Light Station area would not be developed.

Sanitation
The existing sanitation system would continue to be utilized. New facilities would not be constructed.

Facilities Maintenance
Maintenance of facilities would be performed in a minimalist and economical manner.

Site Security
BLM would develop agreement(s) with local law enforcement agencies for site security.....same as the Preferred Alternative.

f. Biological/Geophysical Research
Authorize biological or geophysical research at the Light Station as ongoing Light Station operations allow……..same as the Preferred Alternative.

g. Native Plant and Animal Protection and Restoration

Native Plant and Animal Protection
Protect important wildlife use areas and native vegetation at the Light Station……..same as the Preferred Alternative.

Native Plant Restoration
Remove iceplant and restore native plant communities at the Light Station……..same as the Preferred Alternative.

Sensitive Plant Species
Protect and propagate sensitive plant species at the Light Station……..same as the Preferred Alternative.

h. Cultural Resource Management

Prehistoric Resources
Incorporate measures to protect and preserve cultural resources in any actions, permits, or Federal undertakings at the Light Station. Identify, protect, and document any cultural resources found at the Light Station……same as the Preferred Alternative.

Collections Management
Artifact acquisitions would be minimized, but would conform to the U.S. Department of Interior's (DOI) "Museum Property Handbook", 36 CFR 79, 43 CFR 7, and the Archaeological Resource Protection Act.

i. Shoreline Erosion
Prevent or minimize accelerated shoreline erosion at the Light Station…...same as the Preferred Alternative.

j. Soil Conservation
Avoid accelerated wind erosion of the soils at the Light Station…….same as the Preferred Alternative.

k. Visual Resource Management
Make preservation of the historic and natural viewshed an important factor in all actions at the Light Station……..same as the Preferred Alternative.

l. Implementation Schedule
Actions would be implemented by BLM as funding and staffing allow, with health and safety issues receiving priority……..same as the Preferred Alternative.

2. ALTERNATIVE #2 – THE MINIMAL STABILIZATION ALTERNATIVE

Under this alternative, BLM would continue to manage the site in a state of arrested deterioration with limited stabilization of the National Register properties and no significant site improvements. Limited public use would be allowed.

a. Restoration/Reconstruction of Historic Structures

National Register Properties
The stabilization of the three National Register properties would take precedence over other projects, unless a health and safety issue overrides priorities. Stabilization of the site would be a multi-year effort and require guaranteed funding to keep projects protected. Budget and scheduling priorities would reflect a phased approach in order to secure both appropriated and donated funding. Ensure that staff, volunteers, partners and contractors are competent in the stabilization practices and that the appropriate guidance is factored into contractual and project-level work.

Lighthouse (contributing structure): Stabilize the lighthouse's existing features. Focus initial efforts on materials testing including structural cast iron (stair system) and masonry components. Initiate engineering actions to correct structural deficiencies. Remove lead-based paint and other contaminants. Maintain present Aid to Navigation beacon (VRB-25). Do not reconstruct the lighthouse cupola (the upper 43 feet of the original lighthouse).

Fog Signal Building (contributing structure): Stabilize and repair the main features of the fog signal building. Stabilize structural elements and limit use to administrative use. Remove lead-based paint and other contaminants. Repair roof/windows as needed to prevent further damage. Re-instate appropriate ventilation to minimize mold growth and dry rot.

Fuel/Oil House (contributing structure): Stabilize and repair the fuel/oil house existing features. Remove lead-based paint and other contaminants. Re-roof and reinstate ventilation for building. Seal building to entry.

Restoration/Reconstruction and Adaptive Re-Use of Missing Features (non-contributing structures):

Tank Storage Building: Remove lead-based paint and other contaminants. Repair structural deterioration to the floor and foundation systems. Re-roof and reinstate ventilation for building. Repair existing, external main electrical load center enclosure. Repair siding and repaint structure to match historic color patterns.

Fuel and Storage Building: Stabilize this structure to prevent collapse. Remove lead-based paint and other contaminants. Repair structural deterioration to the floor and foundation systems. Re-roof and reinstate ventilation for building. Repair siding and repaint structure to match surrounding color patterns.

Reconstruction and Adaptive Reuse of Missing (complementary) Structures and Features:

Under this Alternative, structures such as the Laundry, Watchroom, Keeper's Triplex, Head Keeper's Residence, Barn, Wharf, Warehouse, Water Tower, Rain Catchment, and Water Storage System would not be reconstructed or adaptively used.....same as Alternative #1.

b. Historic Landscape
Maintain present windbreak configuration and replace dead and down elements as needed.

c. Public Visitation at the Light Station

Tours and Public Access
Public visitation would be limited to structured, docent-led tours.....same as Preferred Alternative, except that visitor use would be limited to 3,000 visitors year and no drive-in public visitation would be considered.

Public Use Guidelines
The existing supplementary rules dated April 15, 2002 would be utilized.....same as Preferred Alternative.

Interpretation and Education
same as Preferred Alternative.

Merchandising
Allow the Piedras Blancas Light Station Association to be the organization conducting sales activities at the Piedras Blancas Light Station.....same as Preferred Alternative.

d. Realty Actions

Land Tenure
Based on the restraints within Public Land Order 7501, the Light Station would be retained in United States ownership under the jurisdiction of BLM.....same as the Preferred Alternative.

Easement Acquisition - Access Easement
Acquire access rights along the existing corridor between the Light Station boundary and State Highway 1. The new access easement or license would allow for administrative as well as public use, be of sufficient width to meet BLM and public access needs, and be controllable by BLM. Traffic safety would be a prime factor in the design of the new access.

Easement Acquisition - Water Supply Easement
Acquire water supply conveyance rights on a corridor between the Light Station boundary and a spring or water source…….same as the Preferred Alternative.

Utility Easements
The existing above-ground electric line that serves the Light Station would not be buried. Alternative sources of power or communications would not be pursued.

Public Benefit Communications Facility and Other Rights-of-Way
Maintain the existing authorizations for communication site rights-of-way until technology and/or economics provide a viable alternative. Consider new rights-of-way on a case-by-case basis……same as the Preferred Alternative.

Aid to Navigation
Maintain existing right-of-way to the Coast Guard for the lighthouse light, and continue operation of the light…….same as the Preferred Alternative.

Short Term Permits for Various Uses
Applications for short-term permits for miscellaneous leases, permits, and easements for various uses would be considered and adjudicated by BLM on a case-by-case basis……..same as the Preferred Alternative.

e. Infrastructure and Administrative Facilities

Administrative Facility
Use and repair the existing administrative facility and boat house…….same as Alternative #1.

Housing
Use and repair the existing housing units……same as Alternative #1.

Parking/Interior Circulation
Use and repair the existing roads and parking areas……..same as Alternative #1.

Trail Development
Access around the site would be limited to existing hard surfaces such as roads and sidewalks. No new trail development would be planned.

Sanitation
Use the existing septic and trash disposal systems. New public restrooms would be constructed to accommodate public tours, but would use modern waste disposal technology.

Facilities Maintenance
Repair existing features and structures as needed, with an emphasis on low maintenance and durability.

Site Security
BLM would develop agreement(s) with local law enforcement agencies for site security.....same as the Preferred Alternative.

f. Biological/Geophysical Research
Authorize biological or geophysical research at the Light Station as ongoing Light Station operations allow……..same as the Preferred Alternative.

g. Native Plant and Animal Protection and Restoration

Native Plant and Animal Protection
Protect important wildlife use areas and native vegetation at the Light Station……..same as the Preferred Alternative.

Native Plant Restoration
Remove iceplant and restore native plant communities at the Light Station……..same as the Preferred Alternative.

Sensitive Plant Species
Protect and propagate sensitive plant species at the Light Station……..same as the Preferred Alternative.

h. Cultural Resource Management
Incorporate measures to protect and preserve cultural resources in any actions, permits, or Federal undertakings at the Light Station. Identify, protect, and document any cultural resources found at the Light Station……same as the Preferred Alternative.

Cultural Collections
Provide professional-level protection and management for cultural artifacts at the Light Station…….same as the Preferred Alternative.

i. Shoreline Erosion
Prevent or minimize accelerated shoreline erosion at the Light Station…...same as the Preferred Alternative.

j. Soil Conservation
Avoid accelerated wind erosion of the soils at the Light Station…….same as the Preferred Alternative.

k. Visual Resource Management
Make preservation of the historic and natural viewshed an important factor in all actions at the Light Station……..same as the Preferred Alternative.

l. Implementation Schedule
Actions would be implemented by BLM as funding and staffing allow, with health and safety issues receiving priority……..same as the Preferred Alternative.

3. ALTERNATIVE #3 – The Disposal Alternative
Under this Alternative, the land and all facilities at the Light Station would be sold or transferred to a private party or another government agency. Based on Public Land Order 7501, the Light Station must remain in United States ownership under BLM jurisdiction, and cannot be sold, exchanged, or otherwise disposed of. Therefore, this Alternative will not be further analyzed.

4. ALTERNATIVE #4 – The Lease/Management Agreement Alternative
Under this Alternative, BLM would retain ownership of the land and all facilities at the Light Station, but would turn over active management of the Light Station to a private party or another government agency. Public Land Order 7501 withdrew the Light Station from entry, such that leases under the Federal Land Policy and Management Act, the Recreation & Public Purposes Act , or other authorities are not allowable. A management agreement between BLM and another party would be allowable under Public Land Order 7501, but such an agreement is not foreseen as necessary at this time or for the lifespan of this Plan. Future modifications to this Plan may fully consider such an Alternative, but it will not be further analyzed in this document.

D. Background
Refer to the Piedras Blancas Light Station Management Plan, Part I – Introduction, for a discussion on the background and history of the Light Station.

E. Affected Environment

1. Conformance with Applicable BLM Land Use Plan(s)

Refer to the Piedras Blancas Light Station Management Plan, Part I (C), for a discussion on BLM's applicable land use plan.

2. Relationship to Statutes, Regulations, and Other Plans

Refer to the Piedras Blancas Light Station Management Plan, Part I (C), for a discussion on statutes, regulations, and other plans.

3. General Setting and Location

Refer to the Piedras Blancas Light Station Management Plan, Part I – Introduction, for a discussion on the location and setting of the Light Station.

4. Existing Land Uses, Facilities, Adjacent Land Uses, and Socio-Economic Conditions

Refer to the Piedras Blancas Light Station Management Plan, Part I (E, F, G, H), for a discussion on the existing land uses, existing facilities, adjacent land uses, and the socio-economic conditions at the Light Station.

5. Affected Resources and Land Uses

Refer to the Piedras Blancas Light Station Management Plan, Part I (D), for a discussion of the affected resources and land uses.

F. Environmental Consequences (Impacts)
There are 14 critical elements of the human environment that must be addressed in all BLM NEPA documents. None of the Alternatives is expected to significantly impact the following critical elements:

- air quality
- areas of critical environmental concern (ACECs)
- environmental justice
- floodplains
- hazardous or solid wastes

- prime or unique farmlands
- water quality
- wild & scenic rivers
- wilderness

The following critical elements are addressed further in this document:

- cultural resources
- invasive, non-native species
- Native American cultural or religious concerns
- threatened or endangered species
- wetlands/riparian zones

1. Impacts to Administration and Access

a. Impacts From the Preferred Alternative

The construction of the planned new facilities (administrative building, parking areas, water supply, electrical system, etc.) would simplify the overall management of the Light Station. The reconstruction of the laundry facility and installation of new electrical distribution and back-up power capability would assure that the Aid to Navigation is maintained on its 24 hour operating status. It would prevent periodic evacuation of the site during power failures, thus minimizing staff and resident disruptions during inclement weather and other events that cause local power failures. Housing the equipment in a replicated structure provides another element for interpreting the daily lives of families on a remote Light Station. The continuation of the current partnerships with other agencies and organizations is expected to have a positive impact on the administration of the Light Station. Re-routing the current access road would provide for safe access into the site by providing at least a better line of site in both directions for traffic safety. The State Department of Transportation (CALTRANS) plans to re-route a portion of State Highway 1 to protect the highway from the damaging effects of wave action on the highway as the natural topography erodes. With this new alignment proposal, a safe entry into the Light Station could be included into the planning for the re-alignment.

b. Impacts From Alternative #1 – The No Action Alternative

This Alternative would not improve the manageability of the Light Station, and would represent an opportunity foregone in this regard. Retaining the existing administration building would require more and more maintenance funds as the building deteriorates. Maintaining the access road in its current status could pose a safety hazard for employees and visitors at the State Highway 1 turnoff.

c. Impacts From Alternative #2 – The Minimal Stabilization Alternative

This Alternative would have some positive impacts to the administration of the Light Station, although not to the same degree as the Preferred Alternative. The new water supply system would help in the administration of the site. Retaining the existing administration building would require more and more maintenance funds as the building deteriorates. The continuation of the current partnerships with other agencies and organizations would have a positive impact on the administration of the Light Station. Improving the existing access road would present an opportunity to make the turn-off from State Highway 1 safer.

2. Impacts to Biological Resources - Wildlife

a. Impacts From the Preferred Alternative

The restoration of the existing lighthouse, fog signal building and fuel/oil house and the restoration/reconstruction of the other historic buildings would have no perceptible impacts to the terrestrial, marine or special status animals inhabiting the Piedras Blancas Light Station site. The maintenance of the existing water system and utilities would also have no perceptible impacts. The rerouting of the roads and utilities would have the potential to effect small burrowing animals and nesting birds, depending on the timing of the construction. However, impacts to nesting birds could be avoided if all construction, restoration and maintenance occurs outside of the nesting season. The removal of power poles would reduce the risk of avian collisions and would remove un-natural perches from the coastal scrublands between the Light Station and the highway.

The greatest potential to impact the wildlife at the light station would be from the visitation of people and their patterns of use. Since public visitation would only be allowed through guided tours and visitors would remain on the trail system

designed to avoid wildlife disturbance, it is unlikely that people would disturb nesting and roosting birds and the marine mammals hauled out on the beaches and rocks. The design and placement of trails, viewing points, and interpretive sites around the facility would be at an adequate distance that would not disturb the marine mammals and birds on the cliffs, rocks and beaches. The increased number of tours and the number of people per tour would have little effect on these wildlife if the human access is controlled and if the trails and facilities are designed with the adequate buffer criteria.

The habitat restoration activities and operations and maintenance of the light station would not have perceptible impacts to wildlife, although site-specific disturbance may occur to individuals. Care would be taken to avoid disturbance during the bird nesting season and periods of use by the marine mammals.

The restoration of the existing lighthouse, fog signal building and fuel/oil house, restoration/reconstruction of the other historic buildings, trail and road system, controlled public visitation, realignment of the access road and utilities, and the operations and maintenance of the light station would have no perceptible effects to the California Brown pelican (Federally Endangered) and Southern sea otter (Federally Threatened), the two federally listed species inhabiting the site. There would not be maintenance activities at the existing water source that would affect the California red-legged frog. It would be extremely unlikely that the management activities identified in this plan would result in the take of these listed species.

Research

The proposed management plan would continue to authorize current and future research that is site-dependent and consistent with the Mission Statement of the light station.

b. Impacts From Alternative #1 – The No Action Alternative

The arrested deterioration of the existing lighthouse, fog signal building and fuel/oil house and the restoration/reconstruction of the other historic buildings would have no perceptible impacts to the terrestrial, marine or special status animals inhabiting the Piedras Blancas light station site. The maintenance of the existing water system and utilities would also have no perceptible impacts. Some management activities would have the potential to effect small burrowing animals and nesting birds, depending on the timing of the work. However, impacts to nesting birds could be avoided if all construction, restoration and maintenance occurs outside of the nesting season.

The impacts to wildlife at the light station from the visitation of people and their patterns of use would be minimal. Since the monthly public visitation would only be allowed through guided tours and visitors would remain on the trail system designed to avoid wildlife disturbance, it is unlikely that people would disturb nesting and roosting birds and the marine mammals hauled out on the beaches and rocks.

The habitat restoration activities and operations and maintenance of the light station would not have perceptible impacts to wildlife, although site-specific disturbance may occur to individuals. Care would be taken to avoid disturbance during the bird nesting season and periods of use by the marine mammals.

Research

The proposed management plan would continue to authorize current and future research that is site-dependent and consistent with the Mission Statement of the light station.

c. Impacts From Alternative #2 – The Minimal Stabilization Alternative

The arrested deterioration of the existing lighthouse, fog signal building and fuel/oil house and the restoration/reconstruction of the other historic buildings would have no perceptible impacts to the terrestrial, marine or special status animals inhabiting the Piedras Blancas light station site. The maintenance of the existing water system and utilities would also have no perceptible impacts. Some management activities would have the potential to effect small burrowing animals and nesting birds, depending on the timing of the work. However, impacts to nesting birds could be avoided if all construction, restoration and maintenance occurs outside of the nesting season.

The impacts to wildlife at the light station from the limited visitation of people and their patterns of use would be minimal. Since the monthly public visitation would only be allowed through guided tours and visitors would remain on the trail system designed to avoid wildlife disturbance, it is unlikely that people would disturb nesting and roosting birds and the marine mammals hauled out on the beaches and rocks.

The habitat restoration activities and operations and maintenance of the light station would not have perceptible impacts to wildlife, although site-specific disturbance may occur to individuals. Care would be taken to avoid disturbance during the bird nesting season and periods of use by the marine mammals.

Research

The proposed management plan would continue to authorize current and future research that is site-dependent and consistent with the Mission Statement of the light station.

3. Impacts to Biological Resources – Vegetation

a. Impacts From the Preferred Alternative

Overall, the impacts from the preferred alternative would be beneficial to native vegetation and local rare plants. Small amounts of habitat may be lost or temporarily degraded as a result of construction associated with restoration of existing Light Station structures, reconstruction of historic buildings, installation of access and utility routes, and implementation of the proposed trail system. Landscaping, including the re-creation of historical landscaping, may introduce weedy non-native species either by the choice of inappropriate elements or via inadvertent contaminants in nursery stock. The proposed lawn east of the lighthouse may increase weed populations in adjacent natural habitat. All other proposed actions would be beneficial for, or neutral to, native vegetation. The extent of native habitat would increase due to ongoing weed control and associated restoration efforts. Rare plant populations would be maintained or increased as more habitat is restored. Education about the value of rare plants and native vegetation would minimize inappropriate and destructive behavior by Light Station visitors.

b. Impacts From Alternative #1 – The No Action Alternative

This alternative would have less direct negative impacts on native vegetation, but also fewer beneficial impacts. There would be no disturbance associated with construction or restoration of Light Station infrastructure. Without new landscaping activities, there would be less chance of introducing new weeds. Less native habitat would be restored and there would be little or nothing done in terms of developing quality rare plant habitat. Restoration would continue, but at a much slower pace than desirable.

c. Impacts From Alternative #2 – The Minimal Stabilization Alternative

This alternative would be relatively similar in impacts to the native vegetation and rare plant species as in the preferred alternative. With less construction, there would be slightly less ground disturbance, however, these areas within the footprint of the historical buildings are currently quite degraded in terms of their native vegetation. Restoration of native habitat would continue at the current volunteer-driven pace.

4. Impacts to Cultural Resources

a. Impacts from the Preferred Alternative (See Table: *Proposed Actions and Effects to Cultural Resources* at end of cultural section).

Historic

Restoration/Rehabilitation/Reconstruction:

Restoration, rehabilitation, and/ or reconstruction of the buildings and structures on the grounds within and encircling the light station National Register Historic District to the standards set forth by the Secretary of the Interior's for the Treatment of Historic Properties would be beneficial to the long term preservation of the three contributing historic buildings in the District. Specific facilities include the lighthouse, the fog-signal and the fuel/oil house. Implementation of aforementioned treatment would resolve *potential adverse effects* to the contributing buildings. A memorandum of agreement (MOA) would be developed with the SHPO on the treatment of resources in the Historic District (draft attached).

The existing non-contributing buildings would be subject to restoration or reconstruction to blend in with the historic character of the light station property which would enhance the historic context and interpretation of the National Register District. Subject facilities include the water tank storage (pump house) and the fuel and storage building which previously served as an office for the Coast Guard. Implementation of aforementioned treatment would be complementary to the Historic District and therefore would resolve *potential adverse effects* (visual) to historic properties.

Other extant non-contributing buildings or structures are subject to removal from the Historic District. The targeted facilities include the vehicle storage (1991), office/ laboratory/Navy Building (1960), keepers quarters (1960) and water storage tank (c. 1960). These modern elements detract from the historic character of the District and therefore removal of them would visually improve the historic landscape. This action results in *no effect* to historic properties.

Facilities previously razed prior to National Register assessment and listing in 1991 would be selected for reconstruction and adaptive reuse because of the importance these buildings and structures once played in the daily life and operation of the light station. Reconstruction of the laundry, watchroom, keeper's tri-plex residence, head keeper's residence and barn would enhance the daily operation and administrative uses for staff, researchers, and volunteers to support the on-going interpretive and preservation programs. Reconstruction with like-in-kind building materials, form, and detail of these non-surviving historic facilities would re-create the period of significance (1875-1940) in the history of the light station and complement the historic context of the District. An identification of reconstruction would be clearly posted on each subject facility. Implementation of aforementioned treatment would be complementary to the Historic District and would resolve *potential adverse effects* (visual) to historic properties.

Historic Landscaping:

Restoring selected elements of the historic landscape would be consistent with enhancing the historic setting of the light station and also serve to stabilize the soils adjacent to the structures and buildings. This action would re-create the landscape as it once appeared during the period of significance (1875-1940) in the history of the light station and historically complement the District. From an historic perspective this action would have *potential adverse effects* on historic properties that would be resolved through implementation of a treatment plan. Refer to related discussion section below under Native Plant and Animal Protection.

Public Visitation Interpretive-Education:

Managed public tours would be led by docents, BLM partners and staff during restoration/ reconstruction phases and subsequently. Tours during various phases of restoration will acquaint the public with the methods or treatments being used in the preservation project. These tours are for the benefit of public education and interpretation of cultural and natural resource values at the Point. Because these tours are structured, led by interpretive guides, consist of limited access to buildings and structures, and require public direction for preservation of historic resources, no impacts to historic resources are anticipated. Should the tours be increased to more than 25,000 visitors/year, adequate staffing and well defined structured public tours would be necessary to avoid impact to historic resources. With implementation of these measures public tourism would result in *no effec*t to historic properties.

Self-guided public visitation would be difficult to manage due to the fragile condition of the extant historic facilities during the initial restoration and reconstruction phases. Once historic facilities are stabilized and restoration efforts are underway, limited self-guided tours may be considered provided adequate preservation issues, public education, safety, and monitoring of visitation use is tracked to ensure no impact to historic resources. If conditions prove not to be in the best interest of long term preservation, self-guided public visitation should be cancelled. Impacts to historic resources would likely occur during the initial stabilization and restoration phases but less likely once stabilization and management measures noted above are implemented and monitored. This action could potentially result in *potential adverse effects* to historic properties.

Formal exhibits and/or displays at selected light station buildings would benefit public educational and preservation awareness. However, due to the lack of open work space and limited access to collections, opportunities for researchers would be limited. Federal regulations require that collections be available for valid researchers through agency approval. Poor conditions associated with humidity and temperature control at these facilities would not be in the best interest of long term preservation of specific items such as paper artifacts. Only carefully selected artifacts that could withstand this type of climate would be considered for exhibits. Alternately, selected artifacts could be replicated or copied for on grounds exhibits to eliminate any issues regarding preservation or security of artifacts.

Artifact exhibits or curatorial storage within any of the three contributing buildings could impact the physical and visual integrity of the building's interior and/or its original cabinetry. However, careful design of alterations could minimize both physical and visual changes by blending in with building's interior and/or cabinetry in both form and materials to preserve those portions that convey its historical and architectural style, resolving *potential adverse effects* via appropriate treatment. Exhibits or curatorial storage in non-contributing buildings would likely be exposed to the same adverse preservation conditions concerning climate and humidity control. However, the exhibits and cabinetry could be built for adaptive reuse in a fashion that is functional and yet not distractive to the historic setting. This action would

resolve *potential adverse effects* to historic properties. Appropriate security for collections would be applied at light station facilities selected for exhibits or for curatorial purposes.

Selection of an approved off-site Federal repository for the collections would ensure standards are met pursuant to 36 CFR 79 and DOI Museum Property Handbook for Federally owned collections. Under these standards, collections would be housed in a controlled humidity and temperature environment and secure for long term preservation along with other requirements. These collections would be readily available with approval from the repository for valid research studies. Selected artifacts could be loaned to the light station on a rotation basis for exhibits and displays upon BLM request. Additionally, selected artifacts could be replicated for permanent housing at the light station. Selection of an off-site repository would take quite a burden off the BLM management concerning proper care of the collections and free-up the needed storage space. BLM property management requires Federal collections be inventoried, accounted for and retained in perpetuity as "Museum Property".

Merchandising:
Sales activities would not impact historic resources, provided stated adequate preservation measures are implemented and monitored as described above under self-guided visitation. This action would result in *no effect* to historic properties.

Realty Actions:

Rerouting the access road; developing a new subsurface water supply system and utility lines; issuing permits on case-by-case basis; maintaining the aid to navigation light and existing communication facility would be managed or developed in a manor that would not impact those qualities of the light station that contributed to its listing as an historic property. Section 110 and 106 procedures would be implemented to ensure *no effect* to the Historic District as applicable.

Infrastructure and Administrative Facilities:
Demolition of the administrative office facility, the concrete masonry boat house, the four contemporary residential units, and relocating the light station's administrative needs to a reconstructed Victorian-era assistant keeper's triplex and head keeper's residence would be beneficial to the visual and historic context of the light station property. It should be noted that none of the aforementioned buildings proposed for demolition meet the 50 years criterion and thus are non-contributing facilities in the District. There are exceptions to this for a property being of significance in the past 50 years if its importance is exceptional. As of 2006, the extant administrative building and four residential units are 46 years old and the boat house is 15 years in age, thereby none of these buildings meet the minimal 50 year criterion. Removal of six buildings and reconstructing two Victorian-era buildings that blend in with the historic expression of the District would resolve *potential adverse effects* to historic properties with implementation of aforementioned treatment. The reconstruction of the Victorian-era buildings to serve as an administrative facility for the light station would be complementary to the historic context of the District, unlike the current six buildings proposed for removal. For further rational and reconstruction conditions, refer to razed facilities section above under Restoration/Rehabilitation/Reconstruction.

A new vehicle parking area, interior access road upgrades, widening and potentially realigning the road between the light station and Highway 1 would not impact any contributing historic properties. However, consideration for realignment of the main road to its original but now abandoned roadbed from Highway 1 to the light station would reposition the road to where it was during its period of historic significance (1875-1940). This could be considered complementary to the historic context of the light station. Overall, these actions would have *no effect* on the integrity of the Historic District. It should be noted that egress and ingress access as well as parking locations have changed positioning over the history of the light station with some of the most dramatic changes occurring in 1959-1960.

The development of an internal trail system would have *no effect* on the Historic District as the meandering trial system would be constructed at a low profile and with building materials that would blend in with the natural and historical setting of the light station.

Maintaining the existing sanitation system and upgrading public restrooms waste disposal system would be adequate for the residential and administrative needs of the light station. With no expansion of the disposal system proposed, this action would have *no effect* on the Historic District.

Facilities maintenance as proposed would be beneficial for long term preservation of the light station property and therefore would have *no effect* on the Historic District with implementation of treatment.

Biological/Geophysical Research:
Biological/Geophysical Research projects would not impact historic resources in the District with compliance of the conditions to protect site resource values at the light station. Specific proposed actions would be considered on a case-by-case basis and subject to Section 106 review prior to authorization to ensure no unmitigated impacts to historic resources as applicable. It is highly probable that historic resources would be avoided which would result in *no effect* to the Historic District.

Native Plant and Animal Protection:
Protection of the native plant resources is beneficial for soil stabilization encircling historic structures and the adjacent sea cliff perimeter of the light station property. Removal of the non-native plants such as the iceplant would be beneficial as the treated areas quickly recover with native plant repopulation from the existing seed bank, or when needed seedlings are planted or seeds are used to fill in spotty areas devoid of native seeds. Reduction of the heavy iceplant on the sea cliff, replaced with native plants, reduces the potential for sea cliff collapse or retreat. The restoration of the native plant population helps to stabilize soils in the Historic District as well as reduce the rate of bank erosion along the sea cliff. Overall, this action would be beneficial for long term stabilization of the soils at Point Piedras Blancas and it provides a cover for any historic resources on the surface. This vegetative cover reduces the potential for illegal surface collection of historic artifacts. While the overall effect of soil stabilization is beneficial to facilities in the District, the action would have *no effect* on historic cultural properties.

Cultural Resource Management:
Cultural resource inventory, preservation, protection, monitoring, and on-going evaluation of site condition in the Historic District are essential for the long term preservation of the light station property as well as prehistoric resources which are important to the Native Americans. A memorandum of agreement (MOA) will be developed with the SHPO on the treatment of resources in the Historic District as well the prehistoric resources which have been determined eligible for inclusion to the National Register. BLM will implement consultation with the Native Americans concerning the proposed treatment measures to protect and preserve cultural properties that may be of religious and cultural significance to tribal organizations.

Collection Management comments would be the same as that provided above under the Public Visitation Interpretive-Education section which addresses formal exhibits, interpretive displays, and repository issues for historic/prehistoric collections housed on-site and off-site at a Federal repository.

Prehistoric

Restoration/Rehabilitation/Reconstruction:

Restoration, rehabilitation, and/ or reconstruction of the buildings and structures on the grounds within and encircling the light station National Register Historic District would potentially impact prehistoric resources, specifically archaeological site CA-SLO-77. Limited test excavations revealed some locations on the light station grounds to be devoid of archaeological subsurface deposits; whereas, the majority of the 19.9 acre parcel contained deposits ranging in depth from 0 to 0.5 meter to a maximum of 2 to 2.5 meters. As a result of the testing and analysis, site CA-SLO-77 has been determined eligible for the National Register under Criterion D for "Management Purposes". As a result of past construction, utility infrastructure, maintenance and operation over the years, soils encircling the three contributing historic buildings (lighthouse, fog-signal, fuel /oil) have been severely altered. Depth of the disturbance was not discernible from limited testing conducted in 2005 under contract with SWCA Environmental Consultants.

These actions could results in potential *adverse effects* to prehistoric site CA-SLO-77. Through careful planning and development of a treatment plan to avoid, minimize or mitigate the adverse effects, a resolution of adverse effects would be determined through consultation and development of a Memorandum of Agreement (MOA) with the SHPO, pursuant to the State Protocol Agreement between BLM and the SHPO (2004). The MOA would be submitted to the SHPO for review and comment regarding the necessary measures to ensure a resolution of adverse effect. Areas delineated as devoid of cultural deposits in this section would also be addressed in the MOA. It is anticipated that some ground disturbing actions within the light station property devoid of prehistoric resources would result in *no effect* determinations. In areas where prehistoric resources have been severely compromised, a determination of *no adverse*

effect may be appropriate. Additionally, BLM would consult with both the Chumash and Salinan tribal organizations concerning proposed treatment, pursuant to 36 CFR 800 and other applicable Federal regulations.

Restoration or reconstruction the water tank storage (pump house) and the fuel and storage building (Coast Guard office) would potentially impact prehistoric resources. However, the area immediately encircling the pump house revealed no archaeological deposit to be present, resulting in a *no effect* determination. Cultural deposits were present around the fuel and storage building, albeit severely disturbed. However, to ensure resolution of potential *adverse effects* to the prehistoric site, a treatment plan would be implemented in accordance with the MOA.

The removal of the vehicle storage building (1991), office/ laboratory/Navy Building (1960), keepers quarters (1960) and water storage tank (c. 1960) from the light station grounds would potentially impact prehistoric resources. However, most of the area adjacent to the vehicle storage building (north to west sides) and the northwest side of the keeper's quarters (1960) revealed no cultural deposit to be present. Cultural deposits were present around the remaining areas pertinent to the facilities noted here, albeit severely disturbed from past earth movement with mechanized equipment. However, to ensure resolution of potential *adverse effects* to prehistoric resources, treatment would be implemented in accordance with the MOA.

Buildings or structures previously razed including the laundry, watchroom, keeper's tri-plex residence, head keeper's residence, and the barn that are selected for reconstruction and adaptive reuse would potentially impact prehistoric resources. Although most of the area encompassing the facilities noted here revealed evidence of prehistoric deposits, the soils around these facilities have been severely impacted by past construction, utility infrastructure, access road/parking areas, maintenance/ operation and demolition or removal of buildings and structures. Some areas adjacent to the head keeper's residence and the laundry tested negative for prehistoric deposits. However, to ensure resolution of potential *adverse effects* to prehistoric resources, treatment would be implemented pursuant with the MOA.

Historic Landscape:

Restoration of selected elements of the historic landscape would potentially impact prehistoric resources. However, to resolve *potential adverse effects* to prehistoric resources, treatment would be implemented in accordance with the MOA. Refer to related discussion below in the section pertinent to Native Plant and Animal Protection.

Public Visitation Interpretive-Education:

Managed public tours during various phases of historic resources restoration/ reconstruction and subsequently would not impact prehistoric resources with the continued compliance of the conditions set forth above under the historic resources section for public tours led by the docents, light station partners, and BLM staff. Should the tours be increased to more than 25,000 visitors/year, adequate staffing and well defined structured public tours would be necessary to avoid impact to prehistoric resources. With implementation of the aforementioned conditions, public tourism would result in *no effec*t to prehistoric resources.

Self-guided tours would be more difficult to manage due to the dispersement and fragile nature of prehistoric resources across the light station grounds. Impacts could result from visitors trampling across cultural deposits and features which could not only displace archaeological features but result in the mixing of cultural stratigraphy and breakage of artifacts. Such disturbance could affect the accuracy of site interpretation and dating methods. Illegal surface collection of artifacts would be highly probable. A structured self-guided tour may reduce the potential of impacts, provided a trail is confined to the existing access road and proposed delineated trail. However, this would require adequate educational and awareness information concerning cultural and natural resources be provided to visitors at the trailhead sign-in register. It would also require monitoring of effectiveness of user compliance, law enforcement support, safety issues awareness, and a clear set of rules to protect all sensitive and fragile cultural and natural resources on the light station grounds. If conditions prove not to be in the best interest of long term preservation of resources, self-guided tours would be cancelled, thereby allowing only guided-tours by staff, volunteers and/or partners. This action could potentially result in an *adverse effect* to prehistoric resources and therefore treatment would be implemented pursuant with the MOA.

For on-site formal exhibits, displays, collection and curatorial storage of prehistoric resources at selected facilities at the light station, comments would be essentially the same as that described above under the Historic section.

For an off-site selected Federal repository for the collections of prehistoric resources, comments would be essentially the same as that described above under the Historic section.

Merchandising:
Sales activities would not impact prehistoric resources, provided stated preservation measures are implemented and monitored as described above under the Historic section pertaining to Public Visitation Interpretive-Education. This action would result in *no effect* to prehistoric resources.

Realty Actions:
Rerouting the access road; developing a new subsurface water supply system and utility lines; issuing permits on case-by-case basis; maintaining the aid to navigation light and existing communication facility would could potentially impact prehistoric resources, excluding maintenance of the aid to navigation light. This action could potentially result in an *adverse effect* to prehistoric resources and therefore treatment would be implemented pursuant with the MOA.

Infrastructure and Administrative Facilities:
Demolition of the administrative office facility, the concrete masonry boat house, the four contemporary residential units, and relocating the light station's administrative needs to a reconstructed Victorian-era assistant keeper's triplex and head keeper's residence would potentially impact prehistoric resources. Although most of his this area has been severely impacted from past cut and fill operations with mechanized equipment, displaced cultural soils and artifacts are discernible on the surface and subsurface as confirmed during limited testing. While some areas to the north and west revealed no subsurface deposits, the remaining area does depict a cultural deposit varying from 0 to 0.5 meter to 0.5 to 1 meter in depth, albeit severely disturbed for the most, there could be intact cultural deposits below the cut and fill areas, especially on the northeast cut slope and southwest parking area fill area adjacent to the subject facilities. This action could potentially result in an *adverse effect* to prehistoric resources and therefore treatment as applicable would be implemented in accordance with the MOA.

A new vehicle parking area, interior access road upgrades, widening and potentially realigning the road between the light station and Highway 1 would potentially impact prehistoric resources on the light station grounds and the adjacent property to the north on State Parks and Caltrans property. The road realignment segment crossing BLM has a cultural deposit ranging from 0 to 0.5 meter to 0.5 to 1 meter in depth; although, the proposed realignment segment has been previously impacted from past mechanized equipment when cutting the original but now abandoned roadbed. The access road and parking areas now used are targeted for potential upgrades. These subject areas have been impacted from past grading, cut and fill operations, and maintenance over the years. Testing revealed cultural deposits range from 0 to 0.5 meter to a maximum depth 1.0 to 1.5 meters along one short segment of the road. Some segments of the currently used road and parking areas are devoid of cultural deposits per results of past testing. Although all of the noted past activities have disturbed the soils and prehistoric resources, subsequent actions would potentially cause additional impact to prehistoric resources. Even though the intent is to confine upgrades and road realignment to locations already impacted to minimize further impact, treatment would be implemented as applicable in accordance with the MOA to resolve potential *adverse effect* to prehistoric resources.

The development and use of an internal trail system would potentially impact prehistoric resources. Although the pedestrian trail would be elevated just above ground surface to avoid impact with prehistoric resources and located in areas previously disturbed such as cut and fill zones that skirt the southwest margin of the main parking lot, minimal disturbance may occur at specific ground anchor points to secure the trail platform. Physical impacts would not be anticipated where existing paved road or parking area segments are used as part of the trail system nor in areas devoid of cultural resources. Public use of the trail would result in disturbance to prehistoric resources should visitors veer of the designated trail, thereby potentially disturbing surface cultural components and/or illegally collecting artifacts. Considering it is an internal trail which would be closely managed, would require public education and awareness information, would require users to stay on the defined trail, and would be monitored for compliance, no impacts to cultural resources are anticipated from use of the trail, resulting in a *no effect* determination. Treatment would be implemented as applicable in accordance with the MOA to resolve potential *adverse effect* to prehistoric resources from trail construction.

Installation of a new electrical distribution system would potentially impact prehistoric resources with reconstruction of the historic laundry to its original location to house the electrical system and back up generator. Although areas encompassing the proposed electrical distribution system have revealed evidence of prehistoric deposits, the soils in the subject area have been impacted by past laundry building and pump house construction, utility infrastructure, maintenance/operation and removal of buildings and structures. Although the immediate area of the proposed laundry/electrical distribution system has tested negative for prehistoric deposits, displaced artifacts have been noted in the area. This action could potentially have an *adverse effect* to prehistoric resources. However, treatment would be implemented as applicable in accordance with the MOA to resolve adverse effects.

Maintaining the existing sanitation system and upgrading public restrooms waste disposal system would be adequate for the residential and administrative needs of the light station. With no expansion of the disposal system proposed, this action would have *no effect* on the prehistoric resources.

Facilities maintenance as proposed for long term preservation of the light station property would not involve ground disturbing activities and therefore would result in *no effect* to prehistoric resources.

Administrative and partnership functions would have *no effect* on prehistoric resources provided on-ground projects are evaluated pursuant to State Protocol Agreement with the SHPO and/or through procedures to be identified in the MOA.

Biological/Geophysical Research:
Biological/Geophysical Research projects in most cases at the point would not impact prehistoric resources resulting in *no effect* determination. However, projects that would potentially disturb surface or subsurface areas of prehistoric site CA-SLO-77 or other prehistoric resources off the light station property would be evaluated pursuant to the BLM/SHPO State Protocol Agreement/or procedures pursuant to appropriate treatment identified in the MOA to resolve potential *adverse effects*.

Native Plant and Animal Protection:
Analysis of impacts would be essentially the same for prehistoric resources as it is described in the Historic section with condition to avoid prehistoric resources. In a high percentage of the time, removal of iceplant would involve cutting or pulling the plant out of the duff level which is several inches thick and provides a protective barrier before reaching the mineral surface where prehistoric resources may be present depending on your precise location on the point. In spotty locations devoid of a protective duff level, plants would be cut at the surface or cautiously removed to avoid disturbance of prehistoric resources. As mentioned in the historic section, the natural repopulation of the native plants would recover quickly thereby preventing soil erosion while providing a protective cover to deter potential theft of artifacts. This action would result in a *no effect* determination for prehistoric resources.

Cultural Resource Management:
Cultural resource inventory, protection, monitoring, and on-going evaluation of site conditions associated activities and Federal undertakings at the point are essential for the long term preservation of prehistoric resources. Specific site CA-SLO-77 is recognized as National Register eligible and important to the Native Americans. For additional comments, refer to the Historic section above under Cultural Resource Management.

Collection Management comments would be the same for prehistoric resources as that provided above under the Historic section for Public Visitation Interpretive-Education which addresses formal exhibits, interpretive displays, and repository issues for historic/prehistoric collections housed on-site and off-site at a Federal repository.

b. Impacts from Alternative #1 – The No Action Alternative

Historic

Under this alternative, the light station would be managed in a state of arrested deterioration with very limited public use or visitation. Considering that BLM has the responsibility to manage and preserve National Register properties, we would be limited under this alternative to do very little in the way of preservation and public visitation initiatives. The bottom line is that planning and budget allocations to manage this property would be a lower priority under this alternative.

Restoration/Rehabilitation/Reconstruction:
With the lack of funding under this alternative very little if any cultural preservation work would be accomplished to save the light station from further deterioration which would result in potential *adverse effects* from neglect to the three contributing properties in the long term.

Historic Landscape:
The historic light house landscape under this alternative would not be restored which would detract from the visual setting of the light station as it appeared historically during its period of significance (1875-1940). This action would have *no effect* physically to the Historic District.

Public Visitation Interpretive-Education:
Little to no managed public tours would be offered under this alternative due to public safety concerns associated with the stability of the light station buildings and structures as well as other concerns associated with the protection of cultural and natural resources on the point. Trespassing by the public would be difficult to deter under this alternative which would lead to impacts to light station historic facilities, prehistoric resources and natural resources. Lack of proactive management would result in potential *adverse effect*.

Little to no public interpretation/education efforts would be performed at the light station concerning the National Register District which would be a disservice or opportunity loss to provide public appreciation and awareness of a significant cultural property on the central coast. This would result *no effect* to the historic property.

Merchandising would not take place at the light station, with the exception of the Piedras Blancas Light Station Association which would be afforded the opportunity to conduct special events. Such events would be authorized with conditions to preserve and protect historic, prehistoric, and natural resources on the point. However, safety would be an issue concerning the use of historic buildings and structures, especially the light house and fog signal buildings. This would result *no effect* to the historic property.

Realty Actions:
Under this alternative, the lack of improving utility systems in the Historic District would lead to further deterioration of the property due to neglect resulting in potential *adverse effect*. However, the potential for new projects that may impact historic resources would be nearly eliminated. With the designation of the light station as a right-of-way avoidance area, there would be *no effects* to historic resources. With the requirement that BLM maintain the light house beacon, a modern light would continue to be used and the possibility of restoring the missing upper portion of the light tower would not be feasible. With BLM approval of short-term leases, permits, and easements for various uses on a case-by-case basis on the point, no unmitigated impacts to historic resources would be anticipated. Such requests would be subjected to Section 106 review and assessment through BLM/SHPO State Protocol (2004). Until an undertaking is proposed, the resulting *effects are unknown*.

Infrastructure and Administrative Facilities:
With the administrative facility and boat house remaining in use and being maintained as needed, there would be *no effect* to historic resources.

With the current parking areas and vehicular access roads remaining unchanged, there would be *no effect* to historic resources.

If a new trail system within the light station grounds is not developed, there would be *no effect* to historic resources.

Under this alternative, the existing electrical distribution system would be maintained and repaired as necessary. This lack of upgrading the system could eventually lead to further deterioration of the electrical system's reliability for the Historic District. This action would result in *no effect* to historic resources.

Use of the existing sanitation system without upgrades would have *no effect* on historic resources.

The minimal maintenance of historic buildings and structures would accelerate deterioration of these facilities and eventually result in the potential collapse of the light tower and the fog signal buildings. Neglect of the property would result in potential *adverse effects*.

The existing partnerships and the volunteer program would be beneficial to the overall care of the light station property while not pursuing new partnerships may result in the loss of public interest in the long term to save the light station. *Effects could not be determined*.

Biological/Geophysical Research:
With existing permits or agreements for biological or geophysical research at the light station to continue but with less new opportunities, there would be *no effects* anticipated to historic resources. Actions that would potentially impact historic resources would be assessed through the Section 106 process and the BLM/SHPO State Protocol (2004).

Native Plant and Animal Protection:
Analysis of this alternative is similar to the preferred alternative and therefore would *no effect* on historic properties.

Cultural Resource Management:
Analysis of this alternative is similar to the preferred alternative for historic properties except the resources would be managed pursuant to the State Protocol Agreement between BLM and the SHPO (2004) to ensure a *no adverse effect* to cultural resources. BLM would implement consultation with the Native Americans concerning proposed undertakings on a case-by-case basis.

Collections Management:
Collection and curation of historic and prehistoric artifacts would be minimized to specific cultural resource research projects and/or data recovery projects as mitigation should an undertaking potentially effect site components that could not be safely avoided. Collections would be preferably located regionally at a repository meeting 36 CFR 79 Federal standards.

Prehistoric

BLM would have less opportunity to proactively manage prehistoric site CA-SLO-77 under this alternative in terms of cultural research, preservation and public visitation initiatives. Authorized limited public use or visitation would result in *no effect* to prehistoric resources. However, trespass would likely become a problem and result in physical damage to prehistoric resources in the form of artifact collection, site tramping and potential illegal digging in archaeological deposits and/or features, resulting in potential *adverse effect* to the site. Should project specific actions be proposed, they would be processed through Section 106, pursuant to the State Protocol Agreement between BLM and the SHPO or 36 CFR 800 to determine effects to prehistoric resources.

Restoration/Rehabilitation/Reconstruction:
Considering that minimal preservation work would be accomplished under this alternative to save the light station, the potential for impacts to prehistoric resources would be minimized to case-by-case projects such as stabilization. Under this scenario, *no effects* to prehistoric would be anticipated.

Historic Landscape:
Under this alternative, *no effect* to prehistoric resources would be anticipated.

Public Visitation Interpretive-Education:
Considering that a minimal number of managed public tours would be offered under this alternative, *no effects* to prehistoric resources would be anticipated. However, trespassing by the public would be difficult to deter under this alternative which would potentially lead to impacts to prehistoric resources in the form of illegal artifact collection, potential digging, trampling of cultural deposits and displacement of surface features and artifacts. In such case the lack of proactive management would result in potential *adverse effect*.

The elimination of concessions would result in *no effects* to prehistoric resources. Allowing the Piedras Blancas Light Station Association an opportunity to conduct special events at the light station would also result in *no effect* to prehistoric resources. Such events would be authorized with conditions to preserve and protect historic, prehistoric, and natural resources on the point. Pre and post monitoring would be implemented to ensure compliance.

Realty Actions:
With the designation of the light station as a right-of-way avoidance area, there would be *no effects* to prehistoric resources. With BLM approval of short-term leases, permits, and easements for various uses on a case-by-case basis, no unmitigated impacts to prehistoric resources would be anticipated. Such requests would be subjected to Section 106 review and assessment, pursuant to the BLM/SHPO State Protocol (2004). Until an undertaking is proposed, the resulting *effects are unknown*.

Infrastructure and Administrative Facilities:
With use and maintenance of existing building facilities, current parking and access remaining unchanged, no new trail system construction, there would be *no effect* to prehistoric resources.

Maintenance and repair as needed for existing subsurface utilities such as electrical lines on the light station property would be processed on a case-by-case basis. Such action would potentially impact prehistoric resources. Such requests would be subjected to Section 106 review and assessment, pursuant to the BLM/SHPO State Protocol. The effects would be assessed on case-by-case basis.

The existing partnerships and the volunteer program would be beneficial to the overall care of the light station property including prehistoric resources while not pursuing new partnerships may result in the loss of public interest to actively engage in site preservation.

Biological/Geophysical Research:
With existing permits or agreements for biological or geophysical research at the light station to continue but with less new opportunities, there would be *no effects* anticipated to prehistoric resources. Should actions be proposed that would potentially impact prehistoric resources, such actions would be assessed through the Section 106 process as noted above.

Native Plant and Animal Protection:
Analysis of this management action concerning prehistoric resources would be similar to the above discussion under Historic Landscape.

Cultural Resource Management:
Same comments for prehistoric resources as described above in the Historic resources section.

Collections Management:
Same comments for prehistoric resources as described above in the Historic resources section.

c. Impacts from Alternative #2 – The Minimal Stabilization Alternative

Historic

Under this alternative, the light station would be managed in a state of arrested deterioration with very limited public use or visitation. Analysis of this alternative is similar to the Preferred Alternative but the emphasis would shift from restoration to stabilization.

Restoration/Rehabilitation/Reconstruction
Under this alternative emphasis would shift from restoration to stabilization and repairs of the three contributing historic buildings in the District. These buildings include the lighthouse, the fog-signal and the fuel/oil house. Benefits of stabilization and repair would be similar to the Preferred Alternative but restoration efforts would not be accomplished. This action would result in a *no adverse effect* determination, pursuant to the BLM/SHPO State Protocol.

The existing non-contributing buildings would be subject to stabilization and repairs with no emphasis on restoration or reconstruction. Repairs would be consistent with the historic character of the light station property. Subject facilities include the water tank storage (pump house) and the fuel and storage building which previously served as an office for the Coast Guard. This action would result in a *no effect* determination.

Other extant non-contributing buildings or structures the vehicle storage (1991), office/ laboratory/Navy Building (1960), and keepers quarters (1960) would be repaired and maintained as needed. The water storage tank (c. 1960) would be dismantled and removed from the District. These remaining modern elements would continue to detract from the historic character of the District. This action would have *no effect* on historic properties.

Facilities previously razed prior to National Register assessment and listing in 1991 would not be reconstructed for adaptive use. Specific facilities that would drop from consideration for reconstruction include the laundry, watchroom, assistant keeper's tri-plex residence, head keeper's residence and barn. This alternative would result in the use of existing facilities for operation and administrative uses by staff, researchers, and volunteers to support the limited interpretive and preservation programs. This action would have *no effect* on historic properties.

Historic Landscape:
Under this alternative, the existing historic windbreak of Cypress trees would be maintained and dead trees would be replaced. However, no other areas within the District would be restored to the historic era of the light station. This action would have *no effect* on historic properties. Refer to related discussion section below under Native Plant and Animal Protection.

Public Visitation Interpretive-Education:
Managed public tours would be limited and maintained at no more than 3,000 visitors/year. Tours would continue to be led by docents, BLM's partners and staff. This alternative would limit the number of people that could gain access to the light station, therefore providing less public opportunity to learn about the significant cultural and natural resources at the Point. This alternative is similar to the Preferred Alternative but with far less visitors per year. *No effects* to historic resources would be anticipated with the reduced number structured tours.

Opportunity for self-guided tours would be limited to case by case authorization with built in conditions to protect and preserve cultural and natural resources. Monitoring of visitation use would be tracked to ensure compliance and *no effect* to historic resources.

Use of formal exhibits and/or displays at selected light station buildings would benefit public educational and preservation awareness during tours as discussed in the Preferred Alternative. Artifact exhibits and curatorial storage space would be limited or reduced under this alternative and therefore an off site repository would also be pursued under this alternative. Selection of an approved off-site Federal repository for the collections would ensure standards are met pursuant to 36 CFR 79 and DOI Museum Property Handbook for Federally owned collections. Effects and treatment measures on the interior of contributing buildings pertaining to cabinetry and storage on-site would be similar to the Preferred Alternative thereby resulting in a *potential adverse effect* determination, pursuant to the BLM/SHPO State Protocol.

Merchandising:
Results of analysis of sales activities would be the same as discussed under the Preferred Alternative (*no effect)*.

Realty Actions:
Results of analysis for realty actions would be the same as the Preferred Alternative with the exception that the above ground electric lines would be left in place and dropped from consideration to be buried. For the proposed actions, Section 110 and 106 procedures would be implemented to ensure *no effect* to historic resources as applicable, pursuant to the BLM/SHPO State Protocol.

Infrastructure and Administrative Facilities:
The existing administrative office facility, the concrete masonry boat house, and the keeper's quarters would be repaired and maintained as necessary for use. This would result in no change to the existing status of these three non-contributing buildings and therefore *no effect* to historic resources.

Maintaining the existing vehicular parking and road system from State Highway 1 to the light station would result in *no effect* historic resources.

Internal pedestrian trail system would be limited to use of existing hard surface roads and sidewalks which would result in *no effect* to historic resources.

Existing electrical distribution system would be repaired and maintained as necessary to keep it operational. This would result in *no effect* to historic resources.

Analysis and results of the continued use and maintenance of the existing sanitation system would be the same as the Preferred Alternative and result *no effect* to historic resources.

Analysis and results of facilities maintenance as proposed would be the same as the Preferred Alternative and result *no effect* to historic resources.

Analysis and results of administrative and partnership functions would be basically the same as the Preferred Alternative but there would be less emphasis on developing new partnerships and less opportunity for proactive projects.

Biological/Geophysical Research:
Analysis and results of biological/geophysical research projects would similar to the No Action Alternative resulting in *no effects* anticipated to historic resources. Actions that would potentially impact historic resources would be assessed through the Section 106 process and BLM/SHPO State Protocol (2004).

Native Plant and Animal Protection:
Analysis and results of this alternative is similar to the Preferred Alternative and therefore would be beneficial to soil stabilization in the Historic District and adjacent areas along the margin of the sea cliff, resulting in a *no effects* determination.

Cultural Resource Management:
Analysis and results of this alternative is the same as the Preferred Alternative.

Collections Management:
Collection Management comments would be similar to the comments provided above under Public Visitation Interpretive-Education discussion concerning formal exhibits, displays and curatorial storage.

Prehistoric:

Restoration/Rehabilitation/Reconstruction:
Under this alternative emphasis would shift from restoration to stabilization and repairs to the three contributing historic buildings in the District. These buildings include the lighthouse, the fog-signal and the fuel/oil house. Stabilization and repair would be similar to the Preferred Alternative but restoration efforts would not be accomplished, thereby greatly reducing the potential for impact to prehistoric site CA-SLO-77.
This action would result in a *no adverse effect* determination to prehistoric resources, pursuant to the BLM/SHPO State Protocol.

The existing non-contributing buildings would be subject to stabilization and repairs with no emphasis on restoration or reconstruction. Subject facilities include the water tank storage (pump house) and the fuel and storage building. Limited potential for impacts to prehistoric resources would be similar to comments provided in the Preferred Alternative. This action would result in a *no adverse effect* determination to prehistoric resources, pursuant to the BLM/SHPO State Protocol.

Other extant non-contributing buildings or structures the vehicle storage (1991), office/ laboratory/Navy Building (1960), and keepers quarters (1960) would be repaired and maintained as needed, thereby the potential for impact to prehistoric resources would be minimized The water storage tank (c. 1960) would be dismantled and removed from the District which could disturb displaced artifacts in an area severely impacted when the tank footings were previously installed. This action would result in a *no adverse effect* determination to prehistoric resources, pursuant to the BLM/SHPO State Protocol.

Facilities previously razed prior to National Register assessment and listing in 1991 would not be reconstructed for adaptive use. Specific facilities that would drop from consideration for reconstruction include the laundry, watchroom, assistant keeper's tri-plex residence, head keeper's residence and barn. This action would result in *no effect* to prehistoric resources.

Historic Landscape:
Under this alternative, the existing historic windbreak of Cypress trees would be maintained and dead trees would be replaced. Analysis and results would be the same as the Preferred Alternative but the subject area under this alternative would be confined to a much smaller area of disturbance. However, to ensure *no adverse effect* to prehistoric resources, protective measures will be incorporated pursuant to the BLM/SHPO State Protocol. Refer to related discussion section below under Native Plant and Animal Protection.

Public Visitation Interpretive-Education:
Structured public tours would be limited and maintained at no more than 3,000 visitors/year. Tours would continue to be led by docents, BLM partners and staff. As noted in the Preferred Alternative, *no effect* to prehistoric resources would be anticipated considering the protection conditions required for public tours as well as the reduction in the number visitors per year.

Opportunity for self-guided tours would be limited to case by case authorization with built in conditions to protect and preserve cultural and natural resources. Monitoring of visitation use would be tracked to ensure compliance and ***no effect*** to prehistoric resources.

Use of formal exhibits and/or displays at selected light station buildings would benefit public educational and preservation awareness during tours. Artifact exhibits and curatorial storage space would be limited under this alternative and therefore an off site repository would pursued. This action would have ***no effect*** to prehistoric resources. Collections would be subject to 36 CFR 79 and Archaeological Resource Protection Act compliance.

Merchandising:
Results of analysis of sales activities would be the same as discussed under the Preferred Alternative, resulting in ***no effect*** to prehistoric resources.

Realty Actions:
Results of analysis and cultural treatment conditions for realty actions would be the same as the Preferred Alternative with the exception that the above ground electric lines would be left in place and dropped from consideration to be buried. This action could potentially result in ***adverse effect*** to prehistoric resources requiring a resolution to the effects. Appropriate treatment would be identified through a Memorandum of Agreement (MOA) with the SHPO, pursuant to the State Protocol Agreement between BLM and the SHPO (2004).

Infrastructure and Administrative Facilities:
The existing administrative office facility, the concrete masonry boat house, and the keeper's quarters would be repaired and maintained as necessary for use. This would result in no change to the existing status of these three non-contributing buildings, resulting in ***no effect*** to prehistoric resources.

Maintaining the existing vehicular parking and road system from State Highway 1 to the light station would result in ***no effect*** to prehistoric resources.

Internal pedestrian trail system would be limited to use of existing hard surface roads and sidewalks which would result in ***no effect*** to prehistoric resources.

Existing electrical distribution system would be repaired and maintained as necessary to keep it operational. This would result in ***no effect*** to prehistoric resources.

Analysis and results of the continued use and maintenance of the existing sanitation system would be the same as the Preferred Alternative for prehistoric resources, resulting in ***no effect*** to prehistoric resources.

Analysis and results of facilities maintenance as proposed would be the same as the Preferred Alternative for prehistoric resources, resulting in ***no effect*** to prehistoric resources.

Analysis and results of administrative and partnership functions such as maintenance would be basically the same as the Preferred Alternative for prehistoric resources but there would be less emphasis on developing new partnerships and less opportunity for proactive projects.

Biological/Geophysical Research:
Analysis and results of biological/geophysical research projects would similar to the No Action Alternative, resulting in ***no effects*** anticipated to prehistoric resources. Actions that would potentially impact historic resources would be assessed through the Section 106 process and BLM/SHPO State Protocol (2004).

Native Plant and Animal Protection:
Analysis and results of this alternative is similar to the Preferred Alternative and therefore would be beneficial to soil stabilization to retain physical integrity of prehistoric resources in the District and adjacent areas along the margins of the promontory. Thus this action would have ***no effect*** on prehistoric resources.

Cultural Resource Management:
Analysis and results of this alternative is the same as the Preferred Alternative for prehistoric resources.

Collections Management:

Collection Management comments would be the same for prehistoric resources as that provided above under the Historic section for Public Visitation Interpretive-Education which addresses formal exhibits, interpretive displays, and repository issues for historic/prehistoric collections housed on-site and off-site at a Federal repository.

TABLE: PROPOSED ACTIONS AND EFFECTS TO CULTURAL RESOURCES

PROPOSED ACTION	PREFERRED ALTERNATIVE EFFECTS		ALTERNATIVE #1 NO ACTION EFFECTS		ALTERNATIVE #2 MINIMAL STABILIZATION EFFECTS	
	Historic	**Prehistoric**	**Historic**	**Prehistoric**	**Historic**	**Prehistoric**
Restoration, rehabilitation, reconstruction, stabilization of facilities	Potential adverse effect	-Potential adverse effect -No adverse effect -No effect	Potential adverse effect (neglect)	-No effect projects -Potential adverse effect (neglect)	No adverse effect	No adverse effect
Non-contributing buildings subject to restoration or reconstruction	Potential adverse effect	-No effect -Potential adverse effect	N/A	**N/A**	No effect	No adverse effect
Non-contributing buildings/ structures subject to removal	No effect	Potential adverse effect	N/A	**N/A**	No effect	No adverse effect
Previously razed buildings to be reconstructed	Potential adverse effect	Potential adverse effect	N/A	**N/A**	No effect	No effect
Historic landscaping	Potential adverse effect	Potential adverse effect	No effect	No effect	No effect	No adverse effect
Guided public visitation interpretive education	No effect	No effect	-Potential adverse effect (neglect) -No effect	-No effect -Potential adverse effect (neglect)	No effect	No effect
Self-guided visitation	Potential adverse effect	Potential adverse effect	N/A	N/A	No effect	No effect
Formal exhibits and displays	N/A	N/A	**N/A**	N/A	N/A	N/A
*Artifact exhibits/ on-site curatorial storage of collection	Potential adverse effect	No effect	No effect	N/A	Potential adverse effect	No effect
*Collection at off-site Federal repository	N/A	**N/A**	N/A	N/A	N/A	N/A
Merchandising	No effect	No effect	No effect	No effect	No effect	No effect
Realty actions	No effect	Potential adverse effect	-Potential adverse effect (neglect) -No effect	-No effect & -Effects unknown	No effect	Potential adverse effect
Infrastructure/ administrative facilities	Potential adverse effect	Potential adverse effect	No effect	No effect	No effect	No effect
Vehicle parking and access	No effect	-Potential adverse effect	No effect	No effect	No effect	No effect
Trail development	No effect	-No effect (use) -Potential adverse effect (construction)	No effect	N/A	No effect	No effect
New electrical system / laundry reconstruction	No effect	Potential adverse effect	No effect (no reconstruction)	**N/A**	No effect	No effect
Sanitation system	No effect	No effect	No effect	No effect	No effect	No effect
Facilities maintenance	No effect	No effect	Potential adverse effect (neglect)	No effect	No effect	No effect
Admin/ partnership	No effect	No effect	N/Deter-mined	No effect	No effect	No effect
Biological/ geophysical research	No effect	-No effect and -Potential adverse effect (subsurface projects)	No effect	No effect	No effect	No effect
Native plant & animal protection	No effect	No effect	No effect	No effect	No effect	No effect
Cultural resource management	N/A	**N/A**	No adverse effect	No adverse effect	N/A	N/A
Collections	*See above	*See above	*See above	*See above	*See above	*See above

Potential Adverse Effect: The four contributing properties: the lighthouse, the fog-signal building, the fuel/oil house, and prehistoric site CA-SLO-77, are subject to potential adverse effect from some of the proposed actions summarized above, unless an appropriate treatment plan is implemented (i.e., avoid, minimize, or mitigate) through a Memorandum

of Agreement (MOA) between the BLM and SHPO, for taking effects into account and to resolve adverse effects. A draft MOA is included in this Plan as an Appendix.

5. Impacts to Recreation and Public Visitation

a. Impacts from the Preferred Alternative

Under this alternative, visitation at the Light Station is estimated at 25,000 ± visitors/year. The upper limits of visitation will be based upon the site's ability to support visitor services such as restrooms, trash collection, and parking. This Alternative is expected to have the most positive impact on meeting the desire of the public to visit and learn about old lighthouses and their environment, although this impact is difficult to quantify at this time. Implementation of a short-term permit system would allow BLM to meet public recreational demand in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts.

b. Impacts from Alternative #1 – The No Action Alternative

Under this alternative, the Light Station would receive no public visitation. Implementation of this Alternative would not negatively impact public recreation activities, but would represent an opportunity foregone for meeting the desire of the public to visit and learn about old lighthouses and their environment. Implementation of a short-term permit system would allow BLM to meet public recreational demand in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts.

c. Impacts from Alternative #2 – The Minimal Stabilization Alternative

Under this alternative, visitation at the Light Station is estimated at 3,000 ± visitors/year. Implementation of this Alternative would minimally meet the desire of the public to visit and learn about old lighthouses and their environment, although this impact is difficult to quantify at this time. Failure to reconstruct the top of the lighthouse (cupola) could negatively impact visitors' tour experience. Implementation of a short-term permit system would allow BLM to meet public recreational demand in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts.

6. Impacts to Shoreline Erosion/Soil Conservation

All of the Alternatives incorporate the same measures to prevent or minimize accelerated shoreline erosion and wind erosion at the Light Station. Impacts to these resources are expected to be insignificant under all Alternatives.

7. Impacts to Socio-Economic Conditions

a. Impacts from the Preferred Alternative

This Alternative is not expected to cause significant changes in population distribution, land uses, or economic production in the area. This Alternative would be the most expensive Alternative to implement, mainly due to the full restoration costs and the re-routing of the entrance road. Costs would likely run into the multiple millions of dollars. However, this Alternative is expected to have the most positive impact on meeting the desire of the public to visit and learn about old lighthouses and their environment, although this impact is difficult to quantify at this time. This Alternative may slightly increase the level of traffic on State Highway 1 between Cambria and the Light Station, although this impact is difficult to quantify at this time. This Alternative would improve traffic safety for the general public by the re-routing of the access road from State Highway 1, which is a somewhat dangerous turnoff at present. This Alternative would slightly increase revenues to BLM, California State Parks, and tourist facilities in the area, although this impact is difficult to quantify at this time.

b. Impacts from Alternative #1 – The No Action Alternative

This Alternative is not expected to cause significant changes in population distribution, land uses, or economic production in the area. This Alternative would be the least expensive to implement, although repair costs for the aging facilities would be higher than the other Alternatives. Implementation of this Alternative would represent an opportunity foregone for meeting the desire of the public to visit and learn about old lighthouses, and for improving traffic safety on State Highway 1.

c. Impacts from Alternative #2 – The Minimal Stabilization Alternative

This Alternative is not expected to cause significant changes in population distribution, land uses, or economic production in the area. Implementation costs for this Alternative would be significantly less than those for the Preferred Alternative. Repair costs for the aging facilities would be about the same as for Alternative #1. Implementation of this Alternative would minimally meet the desire of the public to visit and learn about old lighthouses and their environment, although this impact is difficult to quantify at this time. This Alternative may slightly increase the level of traffic on State Highway 1 between Cambria and the Light Station, although this impact is difficult to quantify at this time.

Implementation of this Alternative would represent an opportunity foregone for improving traffic safety on State Highway 1 by not re-routing the access road. This Alternative would slightly increase revenues to BLM, California State Parks, and tourist facilities in the area, although this impact is difficult to quantify at this time.

8. Impacts to Visual Resources

a. Impacts from the Preferred Alternative

This Alternative is expected to have a positive impact on visual resources by removing the current administrative facility and housing units, by moving the existing aerial power line underground, re-routing the straight access road, eradicating invasive iceplant, and rebuilding the lighthouse cupola. These actions would remove many of the most substantial visual intrusions, provide an unobstructed view of the Light Station from State Highway 1, and return the landscape more to its historic viewshed. A meandering route for the access road would be difficult to see from State Highway 1. This would improve the viewshed from both the highway, and from sea routes due to the geographic sheltering the route receives. It would be consistent with the historic viewshed (1874 to 1940). Use of the historic access road would improve the viewshed from the highway by removing the straight-line scar that the present road creates.

b. Impacts from Alternative #1 – The No Action Alternative

This Alternative is expected to have a minimally positive impact on visual resources through the eradication of invasive iceplant. Implementation of this Alternative would represent an opportunity foregone for improving the visual condition of the Light Station area by not moving the existing aerial power line underground, not re-routing the straight access road, and not rebuilding the lighthouse cupola.

c. Impacts from Alternative #2 – The Minimal Stabilization Alternative

Same as for Alternative #1.

G. Recommended Mitigation

Biological - Wildlife

To the greatest extent practicable, do not schedule construction, maintenance and operations activities if such activities would disrupt birds that are nesting and until young have fledged.

To the greatest extent practicable, do not schedule construction, maintenance and operations activities if such activities would disrupt the marine mammals that are hauled out.

Do not conduct activities or allow visitor use that is within a distance and line of sight that disrupts the activities of marine mammals and nesting/roosting birds.

Cultural

Do not conduct construction or maintenance activities that are ground disturbing until Section 106 compliance is completed pursuant to the State Protocol Agreement between BLM and SHPO (2004), or the Memorandum of Agreement (MOA) between BLM and SHPO, or 36 CFR 800 (including Native American consultation).

Recreation and Public Visitation

Post cliffs with hazard warning signs to keep visitors and staff away from hazards and potential cliff damage.

Shoreline Erosion/Soil Conservation

Limit or cease activities/access in areas with extreme potential for shoreline erosion. Protect large areas of bare soil during invasive plant removal and site development. Incorporate soil protection measures into site development activities.

H. Residual Impacts Following Application of Mitigation Measures

Cultural Resources

No residual impacts to cultural resources (prehistoric or historic) are anticipated with implementation of the State Protocol Agreement between BLM and SHPO (2004), or the Memorandum of Agreement (MOA) between BLM and SHPO, or 36 CFR 800.

I. Cumulative Impacts

Cumulative impacts are defined as "the impacts on the environment, which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7 and 1508.8). In general, cumulative impacts at the Light Station are expected to be insignificant because of the small acreage of the Light Station and the fact that its improvements have been in place for quite some time.

a. Cumulative Impacts from the Preferred Alternative

The Preferred Alternative is not expected to trigger additional development on adjacent lands, except for the re-routing of the access road and the water supply system. Thus, cumulative impacts in regards to adjacent lands are not expected to be significant. No cumulative impacts on ocean resources are anticipated, since all proposed actions are terrestrial. A slight increase in traffic on State Highway 1 is anticipated, but it is not expected to reach a cumulative level of traffic difficulties. No cumulative impacts to cultural resources (prehistoric or historic) are anticipated with implementation of the Memorandum of Agreement (MOA) between BLM and SHPO, or 36 CFR 800 as applicable. Monitoring of actions and public use would ensure procedures as set forth in the aforementioned agreements are in compliance for the long term preservation of prehistoric and historic properties. There may be a slight positive cumulative impact on the economy of the central coast region, but it is not expected to reach a level that triggers demand for new developments in the area.

b. Cumulative Impacts from Alternative #1 – The No Action Alternative

The Preferred Alternative is not expected to trigger additional development on adjacent lands. Thus, cumulative impacts in regards to adjacent lands are not expected to be significant. No cumulative impacts on ocean resources are anticipated, since all proposed actions are terrestrial. No cumulative impacts to cultural resources (prehistoric or historic) are anticipated with implementation of the State Protocol Agreement between BLM and SHPO (signed in 2004)

c. Cumulative Impacts from Alternative #2 – The Minimal Stabilization Alternative

Same as for the Preferred Alternative, although to a lesser, non-quantifiable degree.

J. Consultation and Coordination

1. Parties Consulted

Developing this plan has been both a group and community effort. Our thanks and appreciation goes out to everyone who has contributed time and effort to make this a credible and functional planning document.

Hearst Castle State Park:
Shawn Harris-Guide I
Penny Harris-Community Relation Supervisor
Tom Craig-Landscape Architect

Piedras Blancas Field Station (US Geological Survey):
Brian Hatfield-California Sea Otter Research Biologist

Southwest Fisheries Laboratory (NOAA):
Wayne Perryman-California Gray Whale Project Leader

Monterey Bay National Marine Sanctuary:
Michele Roest-Marine Biologist-Outreach Coordinator

Pending Consultation:

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Santa Ynez Mission Indians
Santa Ynez, Ca

Robert and Diane Duckworth
Salinan Representative
Greenfield, CA

Susan Latta, Co-Chairperson
Salinan Tribe
Kings City, CA

Mark and Rhonda Vigil
San Luis Obispo Chumash Council
Grover Beach, CA

Pilulaw Khus-Zarate, Elder
Northern Chumash Bear Clan
Morro Bay, CA

Special Thanks to:
Carole Adams-Native Plant Coordinator (volunteer)
Richard A. Rowlett
Ron Jameson
Gwen L. Jameson
Thomas Murphy
Galen Rathbun, PhD
Norman Scott, PhD

Native Plant Advisors include Cal Poly botanists:
Malcolm McLeod, PhD
Shirley Sparling, PhD
Dirk Walters, PhD

Also offering invaluable advice on coastal native plants:
Jack Beigle,
California Native Plant Society (and other knowledgeable members of the community).

2. List of Preparers

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Ron Huntsinger - Field Office Manager
Robert D. Rheiner, Jr. - Assistant State Director, Oregon/Washington (retired)
Steve Larson - Assistant Field Office Manager-Resources
Daniel Vaughn - Lead Realty Specialist and Planning Coordinator
Larry Vredenburgh - GIS Coordinator
Richard Graham - Petroleum Engineering Technician
Karen Margrave - Cartographic Technician
Duane Christian - Archaeologist
Denis Kearns, PhD - Botanist
Russ Lewis-Botanist (retired)
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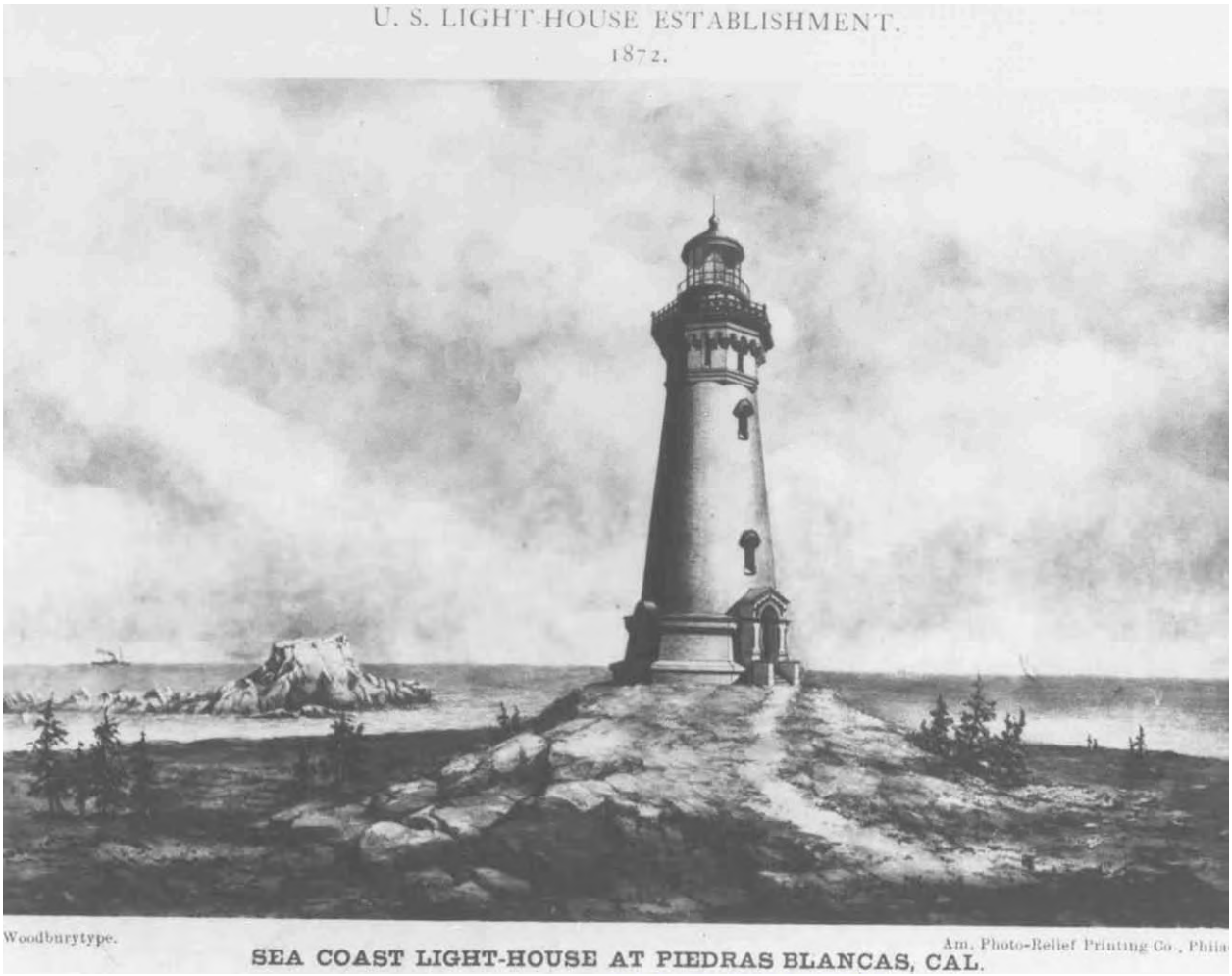
Larry Saslaw - Senior Wildlife Biologist
Amy Kuritsubo - RT&E Coordinator/Biologist
Pat Apley - Law Enforcement Ranger

Piedras Blancas Light Station (BLM)
John H. Bogacki - Site Manager Jim Boucher - Site Manager

PART V APPENDICES



APPENDIX A. Public Land Order 7501

DEPARTMENT OF THE INTERIOR
Bureau of Land Management [CA-160-1430-ET; CACA 7682 and CACA 42632]

Public Land Order No.7501; Partial Revocation of Executive Order Dated June 8, 1866, and Withdrawal of Public Land for Piedras Blancas Light Station; California

AGENCY: Bureau of Land Management, Interior.
ACTION: Public Land Order.

SUMMARY: This order partially revokes an executive order insofar as it affects 19.9 acres of public land withdrawn for lighthouse purposes. The land is no longer needed by the United States Coast Guard for the purpose for which it was withdrawn. This order also withdraws the same land from surface entry, mining, mineral leasing, and mineral material sales for a period of 20 years for the Bureau of Land Management to assure long term protection and preservation of the historic Piedras Blancas Light Station and associated values.

EFFECTIVE DATE: October 12, 2001.

FOR FURTHER INFORMATION CONTACT: Duane Marti, BLM California State Office, 2800 Cottage Way, Sacramento, California 95825-1886, 916-978-4675. SUPPLEMENTARY INFORMATION: By virtue of the authority vested in the Secretary of the Interior by section 204 of the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1714 (1994), it is ordered as follows:

1. The Executive Order, dated June 8, 1866, which withdrew public land for lighthouse purposes, is hereby revoked insofar as it affects the following described land (CACA 7682):

Mount Diablo Meridian T. 26 S., R. 6 E., U.S. Lighthouse Reserve.

The area described contains 19.90 acres in San Luis Obispo County.

2. Subject to valid existing rights, the land described in Paragraph 1, is hereby withdrawn from settlement, sale, location, or entry under the general land laws, including the United States mining laws, 30 U.S.C. Ch. 2 (1994), mineral leasing laws, 30 U.S.C. 181 *et seq.* (1994) and mineral material sale laws, 30 U.S.C. 601-604 (1994), for the Bureau of Land Management to assure long term protection and preservation of the historic Piedras Blancas Light Station and associated values (CACA 42632).
3. This withdrawal will expire 20 years from the effective date of this order unless, as a result of a review conducted before the expiration date pursuant to Section 204(f) of the Federal Land Policy and Management Act of 1976.43 U.S.C. 1714(f) (1994), the Secretary determines that the withdrawal shall be extended.

Dated: September 21, 2001

J. Steven Griles, *Deputy Secretary.*

[FR *Doc.* 01-25690 Filed 10-11-01; 8:45 am]

APPENDIX B. Special Rules for the Piedras Blancas Light Station

SUMMARY: These rules are established as final supplementary rules to provide immediate protection for cultural, historic, and natural features within the recently acquired section of public land at Piedras Blancas. This area contains sensitive habitat, protected marine mammals, cultural sites, and historic buildings. These supplementary rules serve to protect these features. The rules listed below are similar to rules in effect within most parks, nature preserves, and recreation areas.

FOR FURTHER INFORMATION CONTACT: Tim Smith, Field Manager, Bakersfield Field Office, Bureau of Land Management, 3801 Pegasus Drive, Bakersfield, CA 93308, telephone 661-391-6000.

Note: These rules will not appear in the Code of Federal Regulations

Supplementary Rules for Public Lands at the Piedras Blancas Light Station

Public Land Order 7501, published in the **Federal Register** on October 12, 2001 (66 FR 52149), authorized the Bureau of Land Management to manage the Piedras Blancas Light Station on behalf of the American people. The supplementary rules listed below are established under authority of 43 CFR 8364.1, 43 CFR 8365.1B6, and 43 CFR 8341.2(b).

1. You must not enter the lighthouse, other building or structure, grounds, beach area, trails, and access roads unless you are part of a scheduled tour, or at scheduled times as determined by the BLM. You must not camp or stay overnight without a permit from the BLM. You must not leave a scheduled tour and enter areas not covered by the tour.

2. You must not take, disturb, or harass wildlife. You must not approach elephant seals in a manner likely to disturb, alarm, or harm the animals. You must not collect or cut vegetation or collect wildlife except under the terms and conditions of a permit issued by the BLM.

3. You must not enter an area posted as closed. You must not walk, hike, or ride a bicycle on areas or trails not designated for this purpose.

4. You must not drive off the designated access roads and designated parking areas. You must not park a vehicle in a manner which prevents the movement of other vehicles. You must not park a vehicle in an area posted as a No Parking zone. You must not drive a vehicle faster than 15 miles per hour along the entrance road to the area.

5. You must not collect natural features such as rocks and minerals without a permit issued by the BLM. You must not conduct research projects and scientific studies without a permit from the BLM.

6. You must not allow domestic animals or pets to be on the site. Seeing-eye and hearing-ear dogs and pets belonging to the resident staff are excepted. Domesticated pets belonging to the resident staff must be under control of the owner at all times.

7. You must not kindle, start, or attend a fire. You must not use any cooking device on the grounds of the area. You must not throw, place, discard or store litter, refuse, waste, garbage, peelings, pits, or wrappers anywhere except in litter receptacles or litter bags.

8. You must not be under the influence of drugs (as defined by Section 11550 of the California Health and Safety Code) or alcohol (blood alcohol level of 0.8%) within the area.

9. You must not discharge any firearms (except for law enforcement officials in the performance of their duties), air guns, slingshots or use any projectile launching device.

10. You must not engage in fighting, physically threatening or violent behavior.

11. You must not violate any of the laws of the State of California or ordinances of the County of San Luis Obispo. You must not violate regulations of the National Oceanographic and Atmospheric Administration which are in effect within the area.

Supplementary Rules 1 Through 5 Do Not Apply to:

1. Any public official in the performance of fire, emergency, rescue, medical, law enforcement or other similar duty.

2. Any Bureau of Land Management, U.S. Coast Guard, or other authorized personnel while in the performance of their duties, except as restricted by the BLM.

3. Any person or member of a group or institution expressly authorized by permit, license agreement, or other similar authorization while in the performance of activities covered by the authorization, except as restricted by the BLM.

Penalties

Under section 303(a) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1733(a)) and 43 CFR 8360.0-7, if you violate any of these supplementary rules on public lands within the boundaries established in the rules, you may be tried and fined no more than $1,000 or imprisoned for no more than 12 months, or both. Such violations may also be subject to the enhanced fines provided for by 18 U.S.C. 3571.

[FR Doc. 02B8887 Filed 4B12B02; 8:45 am] Published 4-15-02

APPENDIX C. Plant List (*denotes non-native plant)

AIZOACEAE (iceplant family)	
Carpobrotus chilensis	iceplant/sea fig
Carpobrotus edulis	iceplant/Hottentot fig
Drosanthemum floribundum	rosea iceplant
Tetragonia tetragoniodes	New Zealand spinach
ANACARDIACEAE (cashew family)	
Toxidendron diversilobum	poison oak
APIACEAE (carrot family)	
Daucus pusillus	rattlesnake weed
Sanicula crassicaulis	pacific sanicle
ASTERACEAE (sunflower family)	
Achillea millefolium	common (white) yarrow
Ambrosia chamissonis	beach-bur
Artemisia californica	California (coastal) sagebrush
Artemisia douglasiana	mugwort
Baccharis pilularis	coyote brush
Cirsium occidentale var. *compactum*	compact cobwebby thistle
Erigeron glaucus	seaside daisy
Eriophyllum staechadifolium	seaside woolly yarrow
Gnaphalium californicum	California everlasting
Gnaphalium purpureum	purple cudweed
Gnaphalium stramineum	cotton-batting plant
Grindelia stricta var. *platyphylla*	Pacific gum-plant
Hazardia squarrosa var.*squarrosa*	sawtoothed goldenbush
Hemizonia increscens ssp. *increscens*	grassland tarweed
Jaumea carnosa	jaumea
Lasthenia californica	coast goldfields
Layia platyglossa	tidy tips
Lessingia filaginifolia	common beach aster
Madia sativa	coast tarweed
Carduus pycnocephalus *	Italian thistle
*Centaurea melitensis**	tocalote
Cirsium vulgare *	bull thistle
*Cotula coronopifolia**	brass buttons
*Delairea odorata**	cape ivy
*Gnaphalium luteo-album**	weedy cudweed
*Hypochaeris radicata**	false hairy cat's ear
*Osteosperumum fruiticosum**	African daisy/freeway daisy
*Picris echoides**	bristly ox-tongue
*Silybum marianum**	milk thistle
Sonchus asper ssp. *asper**	prickly sow thistle
*Sonchus oleraceus**	common sow thistle
BORAGINACEAE (borage family)	
Amsinckia spectabilis	seaside fiddleneck
Heliotropium curassavicum	wild heliotrope
BRASSICACEAE (mustard family)	
*Brassica campestris**	field mustard
*Brassica nigra**	black mustard
*Cakile maritime**	sea rocket
*Coronopus didymus**	wart-cress
*Lobularia maritime**	sweet alyssum

*Raphanus sativus**	wild radish
CARYOPHYLLACEAE (carnation family)	
*Polycarpon tetraphyllum**	four-leaved polycarp
Spergularia macrotheca var. *macrotheca*	sand spurry
*Silene gallica**	windmill pink
*Spergularia rubra**	purple sand spurry
*Stellaria media**	common chickweed
CHENOPODIACEAE (goosefoot family)	
Atriplex californica	California saltbush
Atriplex lentiformis ssp. *lentiformis*	quail bush
Chenopodium californicum	California goosefoot
Salicornia virginica	pickleweed
*Chenopodium album**	white goosefoot/lamb's quarters
*Chenopodium murale**	nettleleaf goosefoot
CONVOLVULACEAE (morning glory family)	
Calystegia macrostegia ssp.*cyclostegia*	coast morning glory
Calystegia soldanella	beach morning glory
*Dichondra repens**	dichondra
CRASSULACEAE (stonecrop family)	
Dudleya caespitosa	dudleya
Crassula connata	pygmy weed/sand pygmy
CUCURBITACEAE (gourd family)	
Marah fabaceus	man-root/wild cucumber
EUPHORBIACEAE (spurge family)	
Euphorbia spathulata	reticulate-seeded spurge
FABACEAE (bean family)	
Astragalus nuttalii var. *nuttalii*	locoweed/rattleweed
Lotus heermannii var. *orbicularis*	prostrate deerweed
Lupinus arboreus	coastal bush (tree) lupine
*Medicago polymorpha**	bur-clover
*Melilotus officinalis**	sweet yellow clover
*Trifolium fragiferum**	strawberry clover
*Vicia sativa**	spring vetch
FRANKENIACEAE (frankenia family)	
Frankenia salina	alkali heath
GERANIACEAE (geranium family)	
*Geranium retrorsum**	New Zealand geranium
*Erodium circutarium**	red-stem filaree
G*eranium dissectum**	cut-leafed geranium
HYDROPHYLLACEAE (waterleaf family)	
Phacelia distans	common phacelia
IRIDACEAE (iris family)	
Iris douglasiana	Douglas iris
Sisyrinchium bellum	blue-eyed grass
JUNCACEAE (rush family)	
Juncus bufonius var. *bufonius*	toad rush

Juncus sp.	rush
LAMIACEAE (mint family)	
Salvia mellifera	black sage
Stachys bullata	hedge-nettle
LILIACEAE (lily family)	
Chlorogalum pomeridianum var. *divaricatum*	soap plant
*Amaryllis belladonna**	naked lady
LYTHRACEAE (loosestrife family)	
*Lythrum hyssopifolium**	grass poly/hyssop loosestrife
MALVACEAE (mallow family)	
*Malva nicaeensis**	common mallow
MYOPORACEAE (myoporum family)	
*Myoporum laetum**	myoporum
MYRTACEAE (myrtle family)	
Eucalyptus sp.*	eucalyptus
NYCTAGINACEAE (four o'clock family)	
Abronia sp.	sand verbena
ONAGRACEAE (evening primrose family)	
Camissonia cheiranthifolia	beach primrose
Camissonia micrantha	small primrose
Camissonia ovata	suncups
Epilobium canum	California fuchsia
Oenothera elata	Hooker's evening primrose
OROBANCHACEAE (broomrape family)	
Orobanche californica	California broomrape
OXALIDACEAE (oxalis family)	
*Oxalis corniculata **	yellow (creeping wood) sorrel
*Oxalis pes-caprae**	Bermuda buttercup
PAPAVERACEAE (poppy family)	
Eschscholzia californica var. *maritima*	California poppy/seaside poppy
PLANTAGINACEAE (plantain family)	
Plantago maritima	Pacific seaside plantain
*Plantago coronopus**	cut-leaf plantain
*Plantago lanceolata**	English plantain
PLUMBAGINACEAE (leadwort family)	
Armeria maritima	sea pink/thrift
POACEAE (grass family)	
Distichlis spicata	salt grass
*Avena fatua**	wild oats
*Bromus diandrus**	rip-gut brome
*Cynodon dactylon**	Bermuda grass
Hordeum murinum ssp. *leporium**	foxtail/hare barley
Panicum sp.*	millet
*Phalaris canariensis**	canary grass

*Poa annua**	annual bluegrass
*Polypogon monspeliensis**	rabbitfoot grass
*Secale cereale**	cultivated rye
POLYGONACEAE (buckwheat family)	
Eriogonum latifolium	coast buckwheat
Eriogonum parvifolium	dune buckwheat
Pterostegia drymariodies	fairy mist
*Rumex acetosella**	sheep sorrel
*Rumex cripus**	curly dock
PORTULACACEAE (purslane family)	
Calandrinia ciliate	red maids
Claytonia perfoliata	miner's lettuce
PRIMULACEAE (primrose family)	
*Anagallis arvensis**	scarlet pimpernel
RANUNCULACEAE (buttercup family)	
Ranunculus californicus var. *cuneatus*	California buttercup
RHAMNACEAE (buckhorn family)	
Ceanothus thyrsiflorus	blue blossom
ROSACEAE (rose family)	
Rubus ursinus	California blackberry
Horkelia californica	California horkelia
RUBIACEAE (madder family)	
Galium aparine	goose-grass/sticky willy
SCROPHULARIACEAE (figwort family)	
Linaria canadensis	blue toad-flax
Mimulus aurantiacus	sticky monkey flower
Scrophularia californica ssp. *californica*	figwort
SOLANACEAE (nightshade family)	
Solanum douglasii	white (Douglas') nightshade
TROPAEOLACEAE (nasturtium family)	
*Tropaeolum majus**	nasturtium
Other exotic plants used as ornamentals:	
*Cupressus macrocarpa**	Monterey cypress
*Pinus radiate**	Monterey Pine
Rosa sp.*	rose varieties

APPENDIX D. Terrestrial Animal List

SCIENTIFIC NAME	COMMON NAME
Canis lantrans	coyote
Citellus beechehi	California ground squirrel
Lynx rufus	bobcat
Mephitis mephitis	striped skunk
Microtus californicus	California vole
Mustela frenata	long tail weasel
Neotoma fuscipes	dusty-footed wood rat
Peromyscus maniculatus	deer mouse
Procyon lotor	raccoon
Reithrodontomys megaotis	western harvest mouse
Scapanus latimanus	California mole
Sylvilagus bachmani	brush rabbit
Sorex bottae	ornate shrew
Thomonys bottae	valley pocket gopher

APPENDIX E. Bird List

Order Gaviiformes
- Family Gaviidae
  - Red-throated Loon (*Gavia stellata*)
  - Artic Loon (*Gavia arctica*)
  - Pacific Loon (*Gavia pacifica*)
  - Common Loon (*Gavia immer*)
  - Yellow-billed Loon (*Gavia adamsii*)

Order Podicipediformes
- Family Podicipedidae
  - Pied-billed Grebe (*Podilymbus podiceps*)
  - Horned Grebe (*Podiceps auritus*)
  - Red-necked Grebe (*Podiceps grisegena*)
  - Eared Grebe (*Podiceps nigricollis*)
  - Western Grebe (*Aechmophorus occidentalis*)
  - Clark's Grebe (*Aechmophorus clarkii*)

Order Procellariiformes
- Family Diomedeidae
  - Black-footed Albatross (*Diomedea nigripes*)
  - Laysan Albatross (*Diomedea immutablis*)
  - Shy (Salvin's) Albatross (*Diomedea cauta salvini*)
- Family Procellariidae
  - Northern Fulmar (*Fulmarus glacialis*)
  - Pink-footed Shearwater (*Puffinus creatopus*)
  - Flesh-footed Sheawater (*Puffinus carneipes*)
  - Sooty Shearwater (*Puffinus griseus*)
  - Short-tailed Sheawater (*Puffinus tenuirostris*)
  - Manx Sheawater (*Puffinus puffinus*)
  - Black-vented Shearwater (*Puffinus opisthomelas*)
- Family Hydrobatidae
  - Fork-tailed Storm-Petrel (*Oceanodroma furcata*)
  - Ashy Storm-Petrel (*Oceanodroma homochroa*)
  - Black Storm Petrel (*Oceanodroma melania*)

Order Pelecaniformes
- Family Pelecanidae
  - Brown Pelican (*Pelecanus occidentalis*)
- Family Phalacrocoracidae
  - Double-crested Cormorant (*Phalacrocorax auritus*)
  - Brandt's Cormorant (*Phalacrocorax* penicillatus)
  - Pelagic Cormorant (*Phalacrocorax pelagicus*)
- Family Fregatidae
  - Magnificent Frigate bird (*Fregata magnificens*)

Order Ciconiiformes
- Family Ardeidae
  - American Bittern *(Botaurus lentiginosus*)
  - Great Blue Heron (*Ardea herodias*)
  - Great Egret (*Casmerodius albus*)
  - Snowy Egret (*Egretta thula*)
  - Tricolor Heron (*Egretta tricolor*)
  - Cattle Egret (*Bubulcus ibis*)
  - Green Heron (*Butorides virescens*)
  - Black-crowned Night-Heron (*Nycticorax nycticorax*)
- Family Threskiornithidae
  - White Ibis (*Eudocimus albus*)
  - White-faced Ibis (*Plegadis chihi*)

Order Anseriformes

Family Anatidae

Tundra Swan (*Cygnus columbianus*)
Mute Swan (*Cygnus olor*)
Greater White-fronted Goose (*Anser albifrons*)
Snow Goose (*Chen caerulescens*)
Emperor Goose (*Chen canagica*)
Ross' Goose (*Chen rossii*)
Brant (*Branta bernicla*)
Canada Goose (*Branta canadensis*)
Green-winged Teal (*Anas crecca*)
Mallard (*Anas platyrhynchos*)
Northern Pintail (*Anas acuta*)
Blue-winged Teal (*Anas discors*)
Cinnamon Teal (*Anas cyanoptera*)
Nothern Shoveler (*Anas clypeata*)
Gadwall (*Anas strepera*)
American Widgeon (*Anas americana*)
Redhead (*Aythya americana*)
Ring-necked Duck (*Aythya collaris*)
Greater Scaulp (*Aythya marila*)
Harlequin Duck (*Histrionicus histrionicus*)
Oldsquaw (*Clangula hyemalis*)
Black Scoter (*Melanitta nigra*)
Surf Scoter (*Melanitta perspicillata*)
White-winged Scoter (*Melanitta fusca*)
Common Goldeneye (*Bucephala clangula*)
Bufflehead (*Bucephala albeola*)
Common Merganser (*Mergus merganser*)
Red-breasted Merganser (*Mergus serrator*)

Order Falconiformes

Family Cathartidae

Turkey Vulture (*Cathartes aura*)

Family Accipitridae

Osprey (*Pandion haliaetus*)
White-tailed Kite (*Elanus caeruleus*)
Northern Harrier (*Circus cyaneus*)
Sharp-shinned Hawk (*Accipiter striatus*)
Cooper's Hawk (*Accipiter cooperii*)
Red-shouldered Hawk (*Buteo lineatus*)
Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)

Family Falconidae

American Kestrel (*Falco sparverius*)
Merlin (*Falco columbarius*)
Peregrine Falcon (*Falco peregrinus*)
Prairie Falcon (*Falco mexicanus*)

Order Galliformes

Family Phasianidae

Ring-necked Pheasant (*Phasianus colchicus*)

Order Gruiformes

Family Rallidae

Virginia Rail (*Rallus limicola*)
American Coot (*Fulica americana*)

Family Gruidae
Sandhill Crane (*Grus canadensis*)

Order Charadriiformes

Family Charadriidae
Black-bellied Plover (*Pluvialis squatarola*)
American Golden Plover (*Pluvialis dominica*)
Pacific Golden Plover (*Pluvialis fulva*)
Snowy Plover (*Charadrius alexandrinus*)
Semipalmated Plover (*Charadrius semipalmatus*)
Killdeer (*Charadrius vociferus*)

Family Haematopodidae
Black Oystercatcher (*Haematopus bachmani*)

Family Recurvirostridae
Black-necked Stilt (*Himantopus mexicanus*)
American Avocet (*Recurvirostra americana*)

Family Scolopacidae
Greater Yellowlegs (*Tringa melanoleuca*)
Lesser Yellowlegs (*Tringa flavipes*)
Willet (*Catoptrophorus semipalmatus*)
Wandering Tattler (*Heteroscelus incanus*)
Spotted Sandpiper (*Actitis macularia*)
Little Curlew (*Numenius minutus*)
Whimbrel (*Numenius phaeopus*)
Long-billed Curlew (*Numenius americanus*)
Marbled Godwit (*Limosa fedoa*)
Ruddy Turnstone (*Arenaria interpres*)
Black Turnstone (*Arenaria melanocephala*)
Surfbird (*Aphriza virgata*)
Red Knot (*Calidris canutus*)
Sanderling (*Calidris alba*)
Western Sandpiper (*Calidris mauri*)
Least Sandpiper (*Calidris minutilla*)
Pectoral Sandpiper (*Calidris melanotos*)
Dunlin (*Calidris alpina*)
Short-billed Dowitcher (*Limnodromus griseus*)
Long-billed Dowitcher (*Limnodromus scolopaceus*)
Common Snipe (*Gallinago gallinago*)
Wilson's Phalarope (*Phalaropus tricolor*)
Red-necked Phalarope (*Phalaropus lobatus*)
Red Phalarope (*Phalaropus fulicaria*)

Family Laridae
Pomarine Jaeger (*Stercorarius pomarinus*)
Parasitic Jaeger (*Stercorarius parasiticus*)
Laughing Gull (*Larus atricilla*)
Franklin's Gull (*Larus pipixca*n
Bonaparte's Gull (*Larus philadelphia*)
Heermann's Gull (*Larus heermanni*)
Mew Gull (*Larus canus*)
Ring-billed Gull (*Larus delawarensis*)
California Gull (*Larus californicus*)
Herring Gull (*Larus argentatus*)
Thayer's Gull (*Larus thayeri*)
Western Gull (*Larus occidentalis*)
Glaucous-winged Gull (*Larus glaucescens*)
Glaucous Gull (*Larus hyperboreus*)
Black-legged Kittiwake (*Rissa tridactyla*)
Sabine's Gull (*Xema sabini*)
Caspian Tern (*Sterna caspia*)

Royal Tern (*Sterna maxima*)
Elegant Tern (*Sterna elegans*)
Common Tern (*Sterna hirundo*)
Arctic Tern (*Sterna paradisaea*)
Forster's Tern (*Sterna forsteri*)
Black Tern (*Chlidonias niger*)

Family Alcidae

Common Murre (*Uria aalge*)
Pigeon Guillemot (*Cepphus columba*)
Marbled Murrelet (*Brachyramphus marmoratus*)
Xantus' Murrelet (*Synthliboramphus hypoleucus*)
Ancient Murrelet (*Synthliboramphus antiquus*)
Cassin's Auklet (*Ptychoramphus aleuticus*)
Rhinoceros Auklet (*Cerorhinca monocerata*)
Tufted Puffin (*Fratercula cirrhata*)

Order Columbiformes

Family Columbidae

Rock Dove (*Columba livia*)
Band-tailed Pigeon (*Columba fasciata*)
White-winged Dove (*Zenaida asiatica*)
Mourning Dove (*Zenaida macroura*)
Ringed Turtle Dove (*Streptopelia risoria*)

Order Strigiformes

Family Tytonidae

Barn Owl (*Tyto alba*)

Family Strigidae

Western Screech Owl (*Otus kennicottii*)
Great Horned Owl (*Bubo virginianus*)
Burrowing Owl (*Athene cunicularia*)
Long-eared Owl (*Asio otus*)
Short-eared Owl (*Asio flammeus*)

Order Caprimulgiformes

Family Caprimulgidae

Lesser Nighthawk (*Chordeiles acutipennis*)

Order Apodiformes

Family Apodidae

Vaux's Swift (*Chaetura vauxi*)
White-throated Swift (*Aeronautes saxatalis*)

Family Trochilidae

Anna's Hummingbird (*Calypte anna*)
Calliope Hummingbird (*Stellula calliope*)
Rufous Hummingbird (*Selasphorus rufus*)
Allen's Hummingbird (*Selasphorus sasin*)

Order Coraciiformes

Family Alcedinidae

Belted Kingfisher (*Ceryle alcyon*)

Order Piciformes

Family Picidae

Nuttall's Woodpecker (Picoides nuttallii)
Northern Flicker (Colaptes auratus)

Order Passeriformes

Family Tyrannidae

Olive-sided Flycatcher (*Contopus borealis*)
Western Wood-Pewee (*Contopus sordidulus*)
Hammond's Flycatcher (*Empidonax hammondii*)
Pacific Slope Flycatcher (*Empidonax difficilis*)
unid. Empidonax flycatcher (*Empidonax* sp.)
Black Phoebe (*Sayornis nigricans*)Say's Phoebe (*Sayornis saya*)

- Ash-throated Flycatcher (*Myiarchus cinerascens*)
- Tropical Kingbird (*Tyrannus melancholicus*)
- Western Kingbird (*Tyrannus verticalis*)
- Scissor-tailed Flycatcher (*Tyrannus forficatus*)

Family Alaudidae
- Horned Lark (*Eremophila alpestris*)

Family Hirundinidae
- Tree Swallow (*Tachycineta bicolor*)
- Violet-green Swallow (*Tachycineta thalassina*)
- Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
- Bank Swallow (*Riparia riparia*)
- Cliff Swallow (*Hirundo pyrrhonota*)
- Barn Swallow (*Hirundo rustica*)

Family Corvidae
- American Crow (*Corvus brachyrhynchos*)
- Common Raven (*Corvus corax*)
- Yellow-billed Magpie (*Pica nuttalli*)

Family Aegithalidae
- Bushtit (*Psaltriparus minimus*)

Family Sittidae
- Red-breasted Nuthatch (*Sitta canadensis*)

Family Certhiidae
- Brown Creeper (*Certhia americana*)

Family Troglodytidae
- Bewick's Wren (*Thryomanes bewickii*)
- House Wren (*Troglodytes aedon*)
- Marsh Wren (*Cistothorus palustris*)

Family Muscicapidae
- Subfamily Sylviinae
  - Golden-crowned Kinglet (*Regulus satrapa*)
  - Ruby-crowned Kinglet (*Regulus calendula*)
  - Blue-gray Gnatcatcher (*Polioptila caerulea*)
- Subfamily Turdinae
  - Western Bluebird (*Sialis mexicana*)
  - Townsend's Solitaire (*Myadestes townsendi*)
  - Swainson's Thrush (*Catharus ustulatus*)
  - Hermit Thrush (*Catharus guttatus*)
  - American Robin (*Turdus migratorius*)
  - Varied Thrush (*Ixoreus naevius*)

Family Laniidae
- Loggerhead Shrike (*Lanius ludovicianus*)

Family Mimidae
- Northern Mockingbird (*Mimus polyglottos*)
- Sage Thrasher (*Oreoscoptes montanus*)

Family Motacillidae
- American Pipit (*Anthus rubescens*)

Family Bombycillidae
- Cedar Waxwing (*Bombycilla cedrorum*)

Family Sturnidae
- European Starling (*Sturnus vulgaris*)

Family Vireonidae
- Solitary Vireo (*Vireo solitarius*)
- Warbling Vireo (*Vireo gilvus*)
- Philadelphia Vireo (*Vireo philadelphicus*)

Family Emberizidae
- Sub-family ParulinaeProthonotary Warbler (*Protonotaria citrea*)
  - Orange-crowned Warbler (*Vermivora celata*)
  - Nashville Warbler (*Vermivora ruficapilla*)

Northern Parula (*Parula americana*)
Yellow Warbler (*Dendroica petechia*)
Magnolia Warbler (*Dendroica magnolia*)
Black-throated Blue Warbler (*Dendroica caerulescens*)
Yellow-rumped (Audubon's and Myrtle) Warbler (*Dendroica coronata*)
Black-throated Gray Warbler (*Dendroica nigrescens*)
Blackburnian Warbler (*Dendroica fusca*)
Hermit Warbler (*Dendroica occidentalis*)
Townsend's Warbler (*Dendroica townsendi*)
Palm Warbler (*Dendroica palmarum*)
Black-and-white Warbler (*Mniotilta varia*)
American Redstart (*Setophaga ruticilla*)
MacGillivray's Warbler (*Oporornis tolmiei*)
Common Yellowthroat (*Geothlypis trichas*)
Wilson's Warbler (*Wilsonia pusilla*)
Canada Warbler (*Wilsonia canadensis*)
Yellow-breasted Chat (*Icteria virens*)

Subfamily Thraupinae
Western Tanager (*Piranga ludoviciana*)

Subfamily Cardinalinae
Black-headed Grosbeak *(Pheucticus melanocephalus*)
Blue Grosbeak (*Guiraca caerulea*)

Subfamily Emberizinae
Green-tailed Towhee (*Pipilo chlorurus*)
Spotted Towhee (*Pipilo erythrophthalmus*)
Savannah Sparrow (*Passerculus sandwichensis*)
Fox Sparrow (*Passerella iliaca*)
Song Sparrow (*Melospiza melodia*)
Lincoln's Sparrow (*Melospiza lincolnii*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
Lark Sparrow (*Chondestes grammacus*)
Dark-eyed Junco (*Junco hyemalis*)
Snow Bunting (*Plectrophenax nivalis*)

Subfamily Icterinae
Red-winged Blackbird (*Agelaius phoeniceus*)
Western Meadowlark (*Sturnella neglecta*)
Yellow-headed Blackbird *(Xanthocephalus xanthocephalus*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
Great-tailed Grackle (*Quiscalus mexicanus*)
Brown-headed Cowbird (*Molothrus ater*)
Hooded Oriole (*Icterus cucullatus*)
Bullock's (Northern) Oriole *(Icterus bullockii*)

Family Fringillidae

Subfamily Carduelinae
Purple Finch (*Carpodacus purpureus*)
House Finch (*Carpodacus mexicanus*)
Pine Siskin (*Carduelis pinus*)
Lesser Goldfinch (*Carduelis psaltria*)
Lawrence's Goldfinch (*Carduelis lawrencei*)
American Goldfinch (*Carduelis tristis*)

Family Passeridae
House Sparrow (*Passer domesticus*)

(Compiled by Ronald J. Jameson, Gwen L. Jameson, Richard A. Rowlett, and Thomas Murphey)

APPENDIX F. Amphibians and Reptiles List

AMPHIBIANS

SCIENTIFIC NAME	COMMON NAME
Caudata-Salamanders	
Batrachoseps nigriventris	Black-Bellied Slender Salamander
Anura-Frogs and Toads	
Rana draytonii	California Red-Legged Frog
Pseudacris Regilla	Pacific Tree frog

REPTILES

Sauria-Lizards	
Elgaria multicarinata	Southern Alligator Lizard
Sceloporus occidentalis	Western Fence Lizard
Serpentes-Snakes	
Thamnophis elegans	western terrestrial garter snake
Thamnophis sirtalis	Common Garter Snake

compiled by Norman Scott
10 September, 2005

APPENDIX G. Marine Algae List:

SCIENTIFIC NAME	COMMOM NAME
There are 2 large kelps found in abundance off Point Piedras Blancas. They provide habitat for a vast array of marine life.	
Macrocystis pyrifera	giant kelp
Nereocystis luetkeana	bull kelp
Some of the other seaweeds that occur in the area include:	
Alaria marginata	winged kelp *
Analipus japonicus	fir branch
Cryptopleura ruprechtiana (Botryoglossum farlowianum)	(no common name) *
Bryopsis corticulans	green sea fern *
Callithamnion acutum	beauty bush
Cladophora sp.	green tuft
Desmarestia latifrons	acid leaf *
Egregia menziesii	feather boa
Erythrotrichia tetraseriata	(no common name)
Gelidium robustum	gel weed
Chondracanthus (Gigartina) sp.	Turkish towel
Hymenena flabelligera	(no common name)
Mazzaella (Iridaea) sp.	rainbow-leaf
Laminaria setchellii	oarweed
Laminaria sinclairii	oarweed
Microcladia californica	sea lace
Microcladia coulteri	sea lace
Silvetia compressa (Pelvetia fastigiata)	Silva's rock weed
Odonthalia floccosa	(no common name)
Pelvetiopsis limitata	dwarf rock weed *
Porphyra perforate	purple laver
Posteslia palmaeformis	sea palm *
Pterygophora californica	walking kelp
Ptilota filicina	(no common name)
Ulva lobata	sea lettuce

(* = Infrequent within San Luis Obispo County)

APPENDIX H. Historical Summary:

The headland at Piedras Blancas is said to have been the cultural interface of two Native American tribal groups, the Northern Chumash and the Playanos Salinan or "beach people" (Hester, 1978). There is some evidence that the Salinan culture occupied the segment of coastline at Piedras Blancas while the Northern Chumash occupied the coastal area as far north as Estero Bay located about 23 miles southeast of Piedras Blancas. Native American occupation of this section of the central coast, in general is thought to be between 5000 to 9000 years old. However, the actual boundary between these two cultures remains unresolved. It may well be that the tribal boundaries of these two groups fluctuated over time. While recent limited investigations revealed occupation of Piedras Blancas circa 3000 years before present, it is highly probable that the site may have been occupied earlier. Previous archaeological studies indicate that San Luis Obispo County was inhabited as early as 9,000 years ago at places such as Diablo Canyon and other locations along the central coast.

On his historic voyage of exploration along the west coast of what was to become the United States, explorer Juan Rodriguez Cabrillo made many historic sightings and landings which are now, as we know, part of the American culture. One such event occurred in 1542 as Cabrillo sailed north along what is now California's central coast. Cabrillo may have spotted the large white rock that we now call the Outer Islet, just offshore of Point Piedras Blancas. Notations of such rocks on early nautical charts were significant as they added to the body of knowledge that helped subsequent explorers and seamen to chart the coastlines of these foreign shores. These notations ultimately became way points for mariners navigating unfamiliar waters.

In 1769 a land expedition under the command of Captain Gaspar de Portola accompanied by Friar Juan Crespi and others passed through the central coast of California in route to Monterey Bay. Accounts were written about the appearance, activities, and differences between the Salinan Indians to the north, the Playanos Salinan or "Beach People", the Chumash to the south, and the Yokuts to the east.

The lands around Piedras Blancas were held under the Spanish government by the San Miguel Mission. Subsequently, secularization of the missions in 1833 divided some of the mission land into three ranchos including Piedras Blancas, San Simeon, and Santa Rosa Mexican land grants.

In 1840, the Governor of Mexico granted Don Jose de Jesus Pico an extensive tract of land or rancho on the central coast. This rancho was named after the prominent landmark near its center, "Piedra Blanca". Don Pico engaged in cattle, agriculture and some mining on his rancho in the years that followed.

In 1850, after California became a part of the United States, owners of Mexican land grants were given the opportunity to confirm their land ownership through the U.S. court system. However, the U.S. government put a limitation on the size of those holdings, limiting them to eleven "leagues" (which is 48,730 acres or about 76 square miles). The Piedras Blancas Rancho was a larger tract and subject to adjustment, but the U.S. government withheld its confirmation of those excess lands for the moment.

A Portuguese whaler, Captain Joseph Clark, established a coastal whaling station at San Simeon Point. The whaling station remained in operation for 30 years between circa 1860-1890s.

In the meantime, the United States recognized the need for a lighthouse in the area. Westward expansion and events such as the discovery of gold at Sutter's Mill in the California foothills brought fortune seekers from all over the world to sleepy ports like San Francisco, Monterey, and later, Seattle and parts north. The California Coast, which up till now experienced only moderate activity, suddenly saw hundreds of ships of all descriptions plying the coastal waters. Inevitably, misfortune, bad weather and treacherous coastal rocks took their toll of ships and men not familiar with the local sailing conditions. The hue and cry for maritime safety and navigation aids was heard back in Washington.

In 1869, the English bark "Harlech Castle" ran aground just north of Piedras Blancas. That same year, the side-wheel steamboat "Sierra Nevada" ran aground. Other incidents occurred in the area and with the increase in maritime traffic in and out of San Simeon Bay, as well as the growing maritime commerce all along the west coast, the danger of collision and other mishaps increased and so did the need for an aid to navigation.

In 1864, after having made his fortune in silver mining near Virginia City, Nevada, young George Hearst made his way to the west coast and began buying property within the Piedras Blancas Rancho. Soon, the area's natural riches began to reveal themselves. Mercury, mined in the Santa Lucia Mountains, dairy products produced by Swiss dairymen, lumber

from the surrounding hills and other commodities needed transportation to various destinations. Entrepreneur Hearst constructed a pier in San Simeon harbor and almost instantly, turned this once quiet harbor into a bustling shipping port.

On June 8, 1866, President Andrew Johnson signed the Lighthouse Reservation Act for the west coast which authorized the construction of eight lighthouses (including Piedras Blancas) on the Pacific Ocean side of the continent. Until that time, only one lighthouse, Alcatraz, located on the island of the same name in San Francisco Bay, California, served as an aid to navigation for mariners at sea.

Surveys conducted in 1870, 1872, and 1873 confirmed Piedras Blancas Point as the logical site for a "first order" lighthouse. The U.S. Lighthouse Establishment's 12th Lighthouse District was given the task of designing and constructing the lighthouse. Major George H. Elliot, U.S.A. and Engineer to the Lighthouse Board, approved the design of the lighthouse in late 1872. On April 26, 1874, work gangs, under the supervision of a Captain Ashley, were landed by tender on the southeast side of the point, and work commenced immediately, blasting a small, rocky knoll to serve as the foundation of the lighthouse. The brick and cast iron tower constructed was a unique design. A beautiful structure, the tower sported a brick cornice below the gallery deck with filigreed cast iron ornamentation throughout. The illumination for the lighthouse was provided by a first order Fresnel lens (invented by Augustine Fresnel of France in 1822). It rotated on an ornamented cast iron base and clockwork. The lens, base, and clockwork were constructed by Henry Lapaute of France in 1872. The light had a unique "signature", a single flash every 15 seconds as the lens rotated via a clockwork. The signature was changed in 1916 to two flashes every 15 seconds. The clockworks, lens, and kerosene lantern(s) were used until 1948, when they were replaced by a new aero beacon being installed by the U.S. Coast Guard. The longest serving Head Lightkeeper, was Loren V. Thorndyke, a former master mariner who came to work at the Light Station shortly after its opening in 1875 and served until 1906. (His descendants today donate photographs and assistance to the lighthouse in their great grandfather's name). In the years following its opening, other structures and features were added to the site including housing, a fog signal, fuel storage building, a wharf, and other support structures.

On October 9, 1876, the private land ownership of Rancho Piedra Blanca was confirmed by the United States, minus the small area that had been previously reserved for the Light Station. In 1883, the lighthouse experienced "a smart earthquake shock" as reported later that year to the Lighthouse Board. This earthquake was thought to have emanated from the Los Osos fault, which lies approximately two miles to the east of the Light Station. The force of the jolt sent the lantern careening around on its base and causing damage to the lens that was subsequently never fully repaired. More importantly, however, was the effect it had upon the tower itself. At the level of the fourth landing, just below the watch room, cracks appeared in the masonry structure. Over the years, several treatments were used to stabilize the structure. The final solution was to affix two steel compression bands around the octagonal tower section on the outside of the tower, at the forth level. A photo taken by a U.S. Lighthouse Service photographer in 1930 clearly shows the bands in place. As the years progressed, funds to repair this sort of damage became scarce**.** Later actions and a change in lighthouse administration sealed the fate of many lighthouses, including Piedras Blancas, as experienced lightkeepers and site personnel, knowledgeable in lighthouse maintenance and repair, left the service.

In 1939, President Roosevelt signed the Economy Act. As a result, several agencies, including the U.S. Lighthouse Service, the U.S. Lifesaving Service, the Revenue Cutter Service and others were consolidated under the U.S. Coast Guard. This change of organization and administration opened a new chapter in the history and management of our Nation's maritime Aids to Navigation.

In late 1948, an earthquake struck the central coast of California. The (then) Coast Guard Officer in Charge Bert Breedlove recounts the event vividly. "I was conducting my daily equipment check in the engine room (Fog Signal Building) when the first jolt hit us. I was thrown across the room by the violence of the tremor. My first thought was to get clear of this old brick building before it collapsed on me. As I crawled out the door, I looked up to see the lighthouse being shaken as if by invisible hands". As the evidence unfolds, it appears that a large portion of brick masonry was dislodged on the interior of the lighthouse, most likely in the area of the watch room parapet walls. As it fell, it damaged sections of the upper level stairs, the first level stair landing and finally the counterweight well where it snapped off a section of the cast iron "oil butt' shelf. Although no records can now be found to corroborate this premise, it was assumed that the Coast Guard took the opportunity to modernize the light, thus lowering operating expenses. In early 1949, the lantern room, lens, watch room and fourth landing were removed and the tower "capped" with a reinforced concrete top, on which a vertically-stacked 36 inch Aero Beacon was mounted to take the place of the older first order

Lightkeeper Thorndyke and sons.

lens. This new, truncated light bore little resemblance to the former edifice. In many ways, the heart and soul of this venerable structure died with the removal of its crown and beacon. During the next few months, the original first order lens lay at the base of the tower awaiting disposition. When it was discovered that the Coast Guard had plans to dispose of the lens, a group of concerned citizens from the nearby village of Cambria, California journeyed to the site to negotiate its salvation. The Coast Guard Officer in Charge could not release the lens to this group. So, by virtue of a well-intentioned "vigilante" action, they liberated the lens and took it back into town with the intention of displaying it in the town's park. A confrontation between the Coast Guard, the vigilantes and a local congressman ended with the Coast Guard loaning the lens to the local community who have protected and cared for it ever since.

In 1975, the 36" Aero Beacon was declared obsolete and was replaced by an automated 24" Aero Beacon. With this installation, the need to occupy the station on a full time basis ceased, and it was locked and abandoned except for periodic visits to the site to maintain the new beacon. In 1976, the U.S. Fish and Wildlife Service applied for and received a permit to occupy and manage the site as a marine research station. The Service managed the site for many years and a whole generation of marine biologists spent time working and/or studying at Piedras Blancas. In 1999, the 24" Aero Beacon failed, and the Coast Guard activated the tower emergency light to act as the aid to navigation. This action, although it in no way compromised the safety of boaters and fishermen who relied upon it, upset local townspeople who missed "their" lighthouse beacon! A letter to Congresswoman Lois Capps (D) Santa Barbara, lead her to inquire as to the status of the Light Station and its future. She directed her inquiries to the Department of the Interior's Bureau of Land Management, Bakersfield Field Office. The Coast Guard decided that they no longer needed to manage the Federal lands at Piedras Blancas. They began the process to return jurisdiction of the lands to BLM, which is the Federal agency that has jurisdiction over such "withdrawn" lands that are no longer needed and makes the determination for final disposition. In meetings, conducted in the local communities and with affected local, state and federal agencies, BLM was encouraged to assume management responsibilities, which included restoring the historic features, developing

a (limited) access program for the general public, and to continue to make opportunities available for site-dependent research projects.

The Light Station was found eligible under National Register Criteria A and C and was subsequently listed in the National Register of Historic Places on September 3, 1991 as a Historic District. The Light Station was recognized for its importance as an aid in coastal navigation and it served to promote maritime and onshore commerce and trade along California's coast. It was also recognized for its interesting blend of late 19th Century and early 20th Century architecture. Resources within the District consisted of three contributing and eight non-contributing facilities (buildings and structures). The contributing facilities were the lighthouse tower structure (1875), the fog-signal building (1906), and the fuel/oil house (1906-1907).

On October 12, 2001, the 1866 Lighthouse Reservation Act withdrawal was revoked and BLM assumed management responsibility for the site. On May 22, 2002, a formal "change of command" ceremony was held between the U.S. Coast Guard and the Bureau of Land Management. Attending the ceremony were Congresswoman Lois Capps, Assistant Secretary of Interior Lynn Scarlett, BLM State Director Mike Pool, and numerous other Interagency partners and invited public. That same day, a new, 800,000 candlepower beacon was lit by Assist. Secretary Scarlett. BLM then assumed responsibility for operating the Aid to Navigation. Since assuming jurisdiction of the Piedras Blancas Light Station in 2001, BLM realized the significance of the historical, cultural, and public interest features at the site. Just one year prior to this, in 2000, President Clinton created the California Coastal National Monument (also managed by BLM), which is composed of all offshore rocks and pinnacles. It extends from the Oregon Border to the Mexican Border and 12 miles out to sea. BLM management staff saw the potential for Piedras Blancas to serve as an interpretive "Gateway" for the Monument. A permanent site presence was established by BLM in 2001. A manager and full-time maintenance worker were assigned to the site to begin the task of assessing site needs, making repairs of utility infrastructures, developing a management plan, and establishing a community-based volunteer program preparatory to beginning restoration work at the site. BLM hosts 70+ volunteers at any one time. Projects include weed control (primarily the removal of iceplant) and reintroduction and regeneration of native plant species at the point. From 2002 to the present, volunteers have removed approximately 400 (dry) tons of iceplant with another 400 tons left to remove. Volunteers conduct tours, (dressed in period lightkeeper uniforms and civilian dress) and perform a variety of maintenance and renovation tasks. Others conduct historic and natural history research and help to build site knowledge.

On March 11, 2005, much of the 18 mile segment of coastal lands, owned by the Hearst Corporation, were purchased by the State of California, including the segment that lies between the Light Station and State Highway 1.

Volunteers helping with iceplant eradication.

APPENDIX I. Research Projects:
The following research efforts are currently ongoing at the Piedras Blancas Light Station.

a. Monterey Bay National Marine Sanctuary Permits

The Monterey Bay National Marine Sanctuary (MBNMS) manages thousands of square miles of ocean resources, ranging from Monterey, California in the north to Cambria, California to the south. They issue permits and provide oversight to various bona fide research organizations for ocean studies. Tide pool temperature studies, to name one are an on-going activity at the site. Access, however, is not automatic. Researchers must seek access through the site from BLM. Piedras Blancas is a secure site and it is essential that work in and around the site is permitted to protect the Aid to Navigation, the site's natural resources and programs such as the "Return of the Natives" and historic restoration efforts.

b. California Sea Otter Project (USGS) ***(illustration/photo)***

The USGS - Biological Resources Discipline - Western Ecological Research Center – California Sea Otter Project has been involved with on-site research and monitoring activities at Piedras Blancas Light Station since it established a field station here in 1978. Originally with the research branch of US Fish and Wildlife Service, the USGS Sea Otter Project continues to conduct three principle long-term monitoring activities that are dependent on site access. These are:

Sea Otter Surveys - Sea otter surveys are conducted regularly from shore at Piedras Blancas. Pt. Piedras Blancas is in the center of the area counted by the resident biologist as part of the range-wide surveys. These range-wide surveys provide the best index for determining the status of this listed species (Threatened under the Endangered Species Act).

Systematic Beach Surveys - Systematic beach surveys of the immediate area for stranded sea otters (and other marine mammals and birds) have been conducted on a regular basis since 1980. These surveys entail walking the entire perimeter of the light station property (and several kilometers both north and south of Pt. Piedras Blancas) at low tide. Data collected on stranded sea otters is used to determine rates of stranding along this section of coast and would be helpful in documenting increased rates if mortality increases. Data on pinniped, cetacean, and marine turtle strandings are forwarded to the Marine Mammal Stranding Network, coordinated by National Marine Fisheries Service (NOAA).

Sea Otter Stranding Network - Pt. Piedras Blancas is included in, and in the center of, the area of coastal California for which the USGS biologist is responsible for recovering all reported stranded sea otters (from Pt. Sur to Pt. Estero). Most of the sea otters recovered here get examined to determine cause of death. This activity has been identified as a recommended recovery action in the US Fish and Wildlife's Final Revised Recovery Plan for the Southern Sea Otter.

There are several other site-dependent activities conducted by the USGS biologist at Piedras Blancas. Point Piedras Blancas is the site where sea otters regularly haul-out (come out on land to rest). This is a very uncommon sea otter behavior in California. The biologist is currently documenting the dates, times, locations, numbers (including an occasional flipper-tagged animal), sea-surface temperatures and atmospheric conditions when otters haul-out. Since this rare activity is sensitive to human disturbance, this data will be useful in determining guided tour routes.

Since the inception of the northern elephant seal colony on light station property in 1990, USGS biologists have monitored the increase in numbers and increase in range of shoreline used. Flipper tags have been put on a sub-sample of pups each winter. The resident biologist was instrumental in getting better fencing installed between beaches with seals and Highway 1 to reduce/eliminate the number of seals being struck by vehicles.

Incidental to other activities, the resident biologist also reports tagged pinnipeds and banded birds (including snowy plovers) seen from the light station premises and adjacent shoreline to appropriate researchers, monitors the resident peregrine falcons, and documents disturbance to hauled-out pinnipeds and roosting sea birds on the Outer Islet by low flying aircraft (and reports the latter to the enforcement branch of the Monterey Bay National Marine Sanctuary).

c. California Gray Whale Project (NOAA) ***(illustration/photo)***

When the eastern Pacific population of gray whales was removed from the Endangered Species List in 1994, scientists from the South West Fisheries Science Center (SWFSC) began a series of annual shore based surveys of northbound calves from the Piedras Blancas Light Station. This site was chosen for the first shore based survey of gray whale calves in 1980 and 1981, and its unique position along the migratory corridor of northbound cows with calves made it the obvious choice for this modern survey. Because it extends into the path followed by the whales as they approach the Big Sur coastline, the whales pass closer to this point of land than any other site along their route. In addition, the Point protects the waters to the south from the strong northerly winds thus providing excellent sighting conditions. Because

public access to this site is controlled and managed, the scientists can focus their efforts on collecting sightings data without the distractions of other sites. Results from the shore based surveys of gray whales from Piedras Blancas have contributed significantly to the understanding of gray whale life history and to the links between gray whale reproduction and climate variability.

d. Intertidal Studies (PISCO)

The Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) is a long-term program of scientific research and training dedicated to advancing the understanding of marine ecosystems along the U.S. West Coast. PISCO is pioneering an integrated approach to the study of these complex, poorly known, exceedingly rich and economically important environments. PISCO is distinguished by its interdisciplinary approach, large geographic extent, and decades-long time frame. PISCO conducts monitoring and experiments along more than 1200 miles of coastline, as well as laboratory and theoretical studies. The research incorporates oceanography, ecology, chemistry, physiology, molecular biology, genetics, and mathematical modeling to gain insights into ecosystems ranging from individual animals and plants to whole ecosystems. PISCO's findings apply to conservation and resource management issues. Scientists participate in local, regional, national, and international initiatives in marine environmental planning. Through its university courses, PISCO helps to train the next generation of scientists in interdisciplinary approach to marine research. The waters surrounding Piedras Blancas provide the ideal outdoor class room as well as long-term study plots to support these efforts.

e. Pac-Jet Wind Study (NOAA)

The NOAA Environmental Technology Laboratory (now the NOAA Earth System Research Laboratory) first used the Point Piedras Blancas Light Station as a meteorological monitoring site during the summer of 1996. The study, sponsored by the Office of Naval Research, examined coastally trapped atmospheric disturbances along the U.S. west coast. These events are often marked by the onset of low clouds and fog that can significantly affect coastal and marine activity and occur with a strong transition from the climatological northerly flow to southerly flow along the U.S. west coast during each warm season. The NOAA Point Piedras Blancas site provided coastal surface meteorological observations and upper-level wind data in an otherwise data-sparse region. NOAA continued its meteorological measurements at Point Piedras Blancas during the winter of 1997/98 as part of the California Land-Falling Jets Experiment (CALJET). The experiment was designed to improve the forecast of the location and intensity of landfalling cyclones along the U.S. west coast. A key element of these severe storms is the prefrontal low-level jet stream (LLJ). This jet stream can cause extreme coastal rains when it encounters mountains and damaging coastal winds can be created by low-level blocking or mountain wave behavior. The winter of 1997/98 coincided with a high amplitude El Nino event and was characterized by frequent and strong storms impacting the California coast. The Point Piedras Blancas site was in a key location for studying these events. The Point Piedras Blancas site has operated as one of the climatological measurement sites for the Pacific Landfalling Jets Experiment (PACJET) from the winter of 2000/01 through 2004/05 with plans to continue these wintertime measurements indefinitely. The goal of PACJET is to develop and test methods to improve short-term (0-24 h) forecasts of damaging weather on the U.S. west coast in land falling winter storms emerging from the data sparse Pacific Ocean. The project is part of a long-term effort that combines analysis, a series of focused field experiments, development of new products and tools for operational forecasting, and exploration of physical processes that contribute to the linkage between seasonal-to-interannual climate variability and extreme coastal weather events.

APPENDIX J. References

Geology

Engineering Geology of the Piedras Blancas Lighthouse, Felliz, Horacio. Special Study, Geology Department, California State University Stanislaus, 2005.

Geologic Map of the San Luis Obispo-San Simeon Region, California, Hall, E., Ernst, W. Prior, S. and Wiese, J. U.S. Geological Survey, Miscellaneous Investigation Series, Map I-1097, 1979.

Franciscan Mélanges, Morro Bay-San Simeon Area, Hsu, California Division of Mines and Geology, Special Publication 25, p. 2829, 37-38. 1969

Terrestrial Mammals

A Field Guide to the Mammals of North America, Peterson Field Guide Series. Houghton Mifflin Co, 1976.

Amphibians and Reptiles

National Audubon Society Field Guide to California, Alden, et.al. Alfred A Knopf, 1998.

Plants

A California Flora, by Philip Munz, University of California Press, 1973.

An illustrated Field Guide to the Flowering Plants of Monterey Count, by Mary Ann Matthews, California Native Plant Society, 1997.

Central Coast Wildflowers, by Mary Coffeen, EZ Nature Books, 1993.

Dune Mother's Wildflower Guide, by Malcolm McLeod, Californian Native Plant Society, 2001.

Invasive Plants of California's Wildlands, ed. by Bossard, et.al., University of California Press, 2000.

The Jepson Manual: Higher Plants of California, ed. by James Hickman, University of California Press, 1993.

Sunset Western Garden Book, Lane Publishing Company, 2001.

Weeds of the West, 9th edition, University of Wyoming, 2001.

Birds

A Guide to Field Identification; Birds of North America, Golden Press, c. 1966.

Field Guide to the Birds of North America, National Geographic, 1999.
National Audubon Society, The Sibley Guide to Birds, by David Allen Sibley, Alfred A. Knopf, 2000.
The Peterson Field Guide to Western Birds, by Roger Tory Peterson, Houghton Mifflin, 1990.

Algae

An Annotated List of the Marine Algae of San Luis Obispo County, California, With Keys to Genera and Species, by Shirley R. Sparling, Blake Printery, 1977. 88pp. (Where some of the scientific names have changed the names used by Sparling are indicated in parenthesis.)

Pacific Seaweeds; A Guide to Common Seaweeds of the West Coast, by Louis D. Druehl, Harbor Publishing, 2000. 190pp.

Cultural Resources

Bouey, P. D. and M. E. Basgall

1991 *Archaeological Patterns along the South Central Coast, Point Piedras Blancas, San Luis Obispo County, California: Archaeological Test Evaluation of Sites CA-SLO-264, SLO-266, SLO-267, SLO-268, SLO-1226, and SLO-1227.* Far Western Anthropological Research Group. Report Submitted to CALTRANS District 5.

Christian, Duane
2004 Archaeological Report: N0. CA-160-C/V-444: *Piedras Blancas Communication Tower Project (right-of-way serial # CA-44273)*, U.S. Department of the Interior, Bureau of Land Management, Bakersfield Field Office.

Clifford, Jim, Alex Wesson, Cindy Arrington
2006 Archaeological Inventory and Assessment of CA-SLO-77, Piedras Blancas Light Station, San Luis Obispo County, CA. Prepared by SWCA Environmental Consultants for U.S. Department of Interior, Bureau of Land Management, Bakersfield.CA

Fitzgerald, R. T.
2000 *Cross Creek: An Early Holocene/Millingstone Site.* California State Water Project, Coastal Branch Series Paper No. 12. San Luis Obispo County Archaeological Society.

Gibson, R. O.
1975 Preliminary Field Reconnaissance of the Piedras Blancas Light Station, San Luis Obispo County, CA.

1983 *Ethnogeography of the Salinan People: A Systems Approach.* Masters Thesis, California State University, Hayward.

Glassow, M. A. and L. R. Wilcoxon
1988 Coastal Adaptations Near Point Conception, California, with Particular Regard to Shellfish Exploitation. *American Antiquity* 53(1):36-51.

Grant, Campbell
1978 Chumash: Introduction. *In Handbook of North American Indians*, Vol. 8, ed. by R.F. Heizer. Washington, D.C.: Smithsonian Institution. Pp. 505-508.

Greenwood, R. S.
1972 9000 Years of Prehistory at Diablo Canyon, San Luis Obispo County, California. *San Luis Obispo County Archaeological Society Occasional Papers* 7:1-97.

1978 Obispeno and Purisimeno Chumash. In *Handbook of North American Indians*, Vol. 8, edited by R. F. Heizer, pp. 520-523. vol. 8. Smithsonian Institution Press, Washington D.C.

Greenwood, R. S., Vance G. Bente
1976 Cultural Resource Management, A Study for the Hearst Ranch, Greenwood and Associates, Pacific Palisades, CA.

Hester, T. R.
1978 Salinan. In *Handbook of North American Indians*, Vol. 8, edited by R. F. Heizer, pp. 500-504. vol. 8., Smithsonian Institution Press, Washington D.C.

Jones, T. L.
1993 Big Sur: A Keystone in Central California Cultural History. *Pacific Coast Archaeological Society Quarterly* 29(1):1-78.

1995 *Transitions in Prehistoric Diet, Mobility, Exchange, and Social Organization along California's Big Sur Coast.* Unpublished Ph.D. Dissertation, University of California, Davis.

2000 Climate and Vegetation. In: Fitzgerald, R. T. *Cross Creek: An Early Holocene/Millingstone Site.* California State Water Project, Coastal Branch Series Paper No. 12. San Luis Obispo County Archaeological Society.

Jones, T. L., K. Davis, G. Farris, S. D. Grantham, T. W. Fung and B. Rivers

1994 *Toward a Prehistory of Morro Bay: Phase II Archaeological Investigations for the Highway 41 Widening Project, San Luis Obispo County, California.* Report prepared for Caltrans District 5, San Luis Obispo, California.

Jones, T. L. and G. Waugh

1995 *Central California Prehistory: A View from Little Pico Creek.* Perspectives in California Archaeology 3. Institute of Archaeology, University of California, Los Angeles.

1997 Climatic Consequences of Population Pragmatism?: A Middle Holocene Prehistory of the Central Coast. In *Archaeology of the California Coast During the Middle Holocene,* edited by J. M. Erlandson and M. A. Glassow, pp. 111-128. Perspectives in California Archaeology 4. Institute of Archaeology, University of California, Los Angeles.

Joslin, Terry, V. Levulett

2005 Archaeological Survey Report for the Piedras Blancas Realignment Project, San Luis Obispo County, CA.

King, C. D.

1990 *The Evolution of Chumash Society: A Comparative Study of Artifacts used in Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804.* Garland Publishing, New York.

Kroeber, A. L.

1925 *Handbook of the Indians of California.* Bureau of American Ethnology Bulletin 78 (reprinted 1976, Dover Publications, New York).

Levulett, V., K. Wilson

2001 Archaeological Survey Report for the Proposed Realignment on State Highway 01 In San Luis Obispo County, CA.

Mason, J.A.

1912 The Ethnology of the Salinan Indians. University of California Publications in American Archaeology and Ethnology, Vol. 10, No.4, pp.97-240, pls. 21-37. Berkeley, The University Press.

Mikkelsen, P., W. Hildebrant and D. Jones

1998 *Prehistoric Adaptations on the Shores of Morro Bay Estuary: A Report on Excavations at Site Ca-Slo-165, Morro Bay, California.* Submitted to Caltrans District 5, San Luis Obispo, California.

Milliken, R., J. R. Johnson

2005 An *Ethnogeography of Salinan and Northern Chumash Communities - 1769 to 1810*, Far Western Anthropological Research Group, Inc.

Stevens, N. E., R. T. Fitzgerald, N. Farrell, M. A. Giambastiani, J. M. Farquhar and D. Tinsley

2004 *Archaeological Test Excavations at Santa Ysabel Ranch, Paso Robles, San Luis Obispo County, California.* Report submitted to Weyrich Development Company, LLC. Cultural Resource Management Services, Paso Robles.

APPENDIX K. BLM/SHPO Memorandum of Agreement (draft)

MEMORANDUM OF AGREEMENT

BETWEEN THE BUREAU OF LAND MANAGEMENT
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
FOR TAKING EFFECTS INTO ACCOUNT
REGARDING THE PIEDRAS BLANCAS LIGHT STATION MANAGEMENT PLAN
SAN LUIS OBISPO COUNTY, CALIFORNIA

WHEREAS, the Bureau of Land Management (BLM), Bakersfield Field Office has determined the proposed actions in the Piedras Blancas Light Station Management Plan (Appendix 1) that would result in potential adverse effect to the Light Station historic property (P40-040855) and prehistoric site CA-SLO-77 (P40-000077), a property eligible for inclusion in the National Register of Historic Places, and has therefore consulted with the California State Historic Preservation Officer (SHPO) pursuant to Stipulation VI(A) of the State Protocol Agreement between the California State Director of BLM and the SHPO (10-25-04); and

WHEREAS, the BLM has determined that the management plan alternatives and actions constitutes an undertaking as defined in 36 CFR § 800.16(y) and have consulted with the SHPO pursuant to 36 CFR Part 800, regulations effective August 5, 2004, implementing Section 106 of the National Historic Preservation Act (NHPA), as amended (16 U.S.C.; § 470f), and notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect, pursuant to 36 CFR § 800.6(a) (1); and

WHEREAS, BLM, in consultation with the SHPO, has thoroughly considered alternatives, has determined that potential adverse effects to historic site P40-040855 and prehistoric site P40-000077 cannot be avoided, that implementation of the Historic Property Treatment Plan (HPTP) prescribed in Stipulation I.A. of this Memorandum of Agreement (MOA) will satisfactorily take into account the Undertaking's adverse effects on both historic properties, and that it is in the public interest to take the Undertaking's effects into account through implementation of the Secretary of the Interior's Standards for the Treatment of Historic Properties for preservation, rehabilitation, restoration, reconstruction, and the recovery of significant information; and

WHEREAS, the BLM has coordinated and consulted with the Santa Ynez Band of Mission Indians (SYBMI) Tribal government, other Chumash and Salinan Indians regarding the proposed Undertaking and its effect on historic properties, will continue to consult with these parties, and will afford these parties, should the parties so desire, the opportunity to participate in the implementation of this MOA; and

WHEREAS, the BLM has an interest in the proposed Undertaking, to interpret and restore the Light Station property for the long term benefit of the public and to protect and preserve contributing components of both historic properties through implementation of this MOA; and
NOW, THEREFORE, BLM and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on the both historic properties and further agree that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

BLM shall ensure that the following measures are carried out:

I. TREATMENT OF HISTORIC PROPERTIES

A. BLM shall ensure that potential adverse effect of the Undertaking on the Light Station property (P40-040855) and prehistoric site CA-SLO-77 (P40-000077) is resolved by implementing and completing an Historic Property Treatment Plan for actions identified in the *Piedras Blancas Light Station Management Plan, San Luis Obispo County, California* (Appendix 1), as specific actions and accompanying plan drawings and specifications become available. Such actions and specification will be forwarded to the SHPO for review and comment. The life of the plan is approximately 15 years. Routine maintenance which has no effect on the integrity of the historic properties will follow the procedures set forth in the State Protocol Agreement between the California State Director of BLM and the SHPO (10-25-04). Because of its scientific and archeological value, data recovery is prescribed for archaeological deposits at (P40-000077) which would be addressed in the Treatment Plan when site avoidance of contributing components of this property is not feasible.

B. Amendment of the HPTP as set forth hereafter would not require amendment of this MOA.

II. NATIVE AMERICAN CONSULTATION

BLM has consulted with the Santa Ynez Band of Mission Indians (SYBMI) Tribal government, other Chumash and Salinan Indians regarding the proposed Undertaking and its effect on historic properties, will continue to consult with the Native Americans, and will afford them, should they so desire, the opportunity to participate in the implementation of the MOA. Such participation may include, but is not necessarily limited to, monitoring during archaeological fieldwork prescribed in Stipulation I. Should the Native Americans agree to participate as herein set forth, BLM will make an effort to reach a mutually acceptable agreement with them regarding the manner in which they will participate in the implementation of this MOA, and regarding any time frames or other matters that may govern the nature, scope, and frequency of such participation.

III. TREATMENT OF HUMAN REMAINS OF NATIVE AMERICAN ORIGIN

The parties to this MOA agree that Native American burials and related items discovered during implementation of the terms of the MOA will be treated in accordance with the requirements of the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) (NAGPRA). The BLM will consult with the SYBMI Tribal government and other potentially concerned Indian groups in accordance with the requirements of §§ 3(c) and 3(d) of the NAGPRA and implementing regulations found at 43 CFR Part 10 to address the treatment of Native American burials and cultural items that may be discovered during implementation of this MOA.

IV. REPORTING REQUIREMENTS

A. During or within twelve (12) months after BLM has determined that all fieldwork required by Stipulation I has been completed for each year, BLM will ensure preparation, and concurrent distribution to the SYBMI, other interested Chumash and Salinan Indians, and the SHPO a written draft technical report that documents the results of implementing the requirements of Stipulation I. The reviewing parties will be afforded 30 days following receipt of the draft technical report to submit any written comments to BLM.

Failure of these parties to respond within this time frame shall not preclude BLM from authorizing revisions to the draft technical report as BLM may deem appropriate. BLM will provide the reviewing parties with written documentation indicating whether and how the draft technical report will be modified in accordance with any reviewing party comments. Unless the reviewing parties object to this documentation in writing to the BLM within 30 days following receipt, BLM may modify the draft technical report as BLM may deem appropriate. All objections shall be resolved pursuant to stipulation VI.C. Thereafter, BLM may issue the technical report in final form and distribute this document in accordance with Paragraph B of this stipulation.

B. Copies of the final technical report documenting the results of implementing the requirements of Stipulation I, will be distributed by BLM to the SYBMI, other interested Chumash and Salinan Indians, the SHPO and the appropriate California Historical Resources Information Survey (CHRIS) Regional Information Center, subject to terms of stipulation VI.B.

V. DISCOVERIES AND UNANTICIPATED EFFECTS

If BLM determines during implementation of the HPTP or the Undertaking that it will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, BLM will address the discovery or unanticipated effect in accordance with those provisions of the HPTP that relate to the treatment of discoveries and unanticipated effects. BLM at its discretion may hereunder assume any discovered property to be eligible for inclusion in the National Register. BLM compliance with this stipulation shall satisfy the requirements of 36 CFR § 800.13(a) (2).

VI. ADMINISTRATIVE STIPULATIONS

A. STANDARDS

1. Professional Qualifications. All activities prescribed by stipulations I., III., IV., and V. of this MOA shall be carried out under the authority of BLM by or under the direct supervision of a person or persons meeting at a minimum the Secretary of Interior's Standards *Professional Qualifications Standards* (48 FR 44738-39) (PQS) in the appropriate disciplines. However, nothing in this stipulation may be interpreted to preclude BLM or any agent or contractor thereof from using the properly supervised services of persons who do not meet the PQS.

2. Historic Preservation Standards. All activities prescribed by stipulations I., III., IV., and V. of this MOA shall reasonably conform to the BLM 8100 Manual System as well as to applicable standards and guidelines established by *The Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), *The Secretary of Interior's Standards for the Treatment Historic Properties (60 FR 35843),* and the State Protocol Agreement between the California State Director of BLM and the SHPO (10-25-04).

3. Curation and Curation Standards. BLM shall ensure that, to the extent permitted by applicable federal law, that the materials and records resulting from the activities prescribed by stipulations I., III., IV., and V. of this MOA are curated in accordance with 36 CFR Part 79.

B. CONFIDENTIALITY

The parties to this MOA and the SYBMI, other interested Chumash and Salinan Indians acknowledge that historic properties covered by this MOA are subject to the provisions of § 304 of the National Historic Preservation Act of 1966 relating to the disclosure of archaeological site information and having so acknowledged, will ensure that all actions and documentation prescribed by this MOA are consistent with § 304 of the National Historic Preservation Act of 1966.

C. RESOLVING OBJECTIONS

1. Should any party to this MOA, the SYBMI or interested Chumash and Salinan Indians object at any time to the manner in which the terms of this MOA are implemented, or to any action carried out or proposed with respect to implementation of the MOA (other than the Undertaking itself) or to any documentation prepared in accordance with and subject to the terms of this MOA, BLM shall immediately notify the other parties to this MOA, the SYBMI and interested Indians of the objection and consult with the objecting party, the other parties to the MOA, and the SYBMI and interested Indians for no more than 14 days to resolve the objection. BLM shall reasonably determine when this consultation will commence. If the objection is resolved through such consultation, the action in dispute may proceed in accordance with the terms of that resolution. If after initiating such consultation, BLM determines that the objection cannot be resolved through consultation, then BLM shall forward all documentation relevant to the objection to the ACHP, including BLM's proposed response to the objection, with the expectation that the ACHP will, within thirty (30) days after receipt of such documentation:

    a. advise BLM that the ACHP concurs in BLM's proposed response to the objection, whereupon BLM will respond to the objection accordingly; or

    b. provide BLM with recommendations, which BLM will take into account in reaching a final decision regarding its response to the objection; or

    c. notify BLM that the objection will be referred for comment pursuant to 36 CFR § 800.7(a) (4), and proceed to refer the objection and comment. BLM shall take the resulting comments into account in accordance with 36 CFR § 800.7(c) (4) and Section 110(1) of the NHPA.

2. Should the ACHP not exercise one of the following options within 30 days after receipt of all pertinent documentation, BLM may assume the ACHP's concurrence in its proposed response to the objection.

3. BLM shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection. BLM's responsibility to carry out all other actions under this MOA that are not the subject of the objection will remain unchanged.

4. BLM shall provide all parties to this MOA, the SYBMI, other interested Chumash and Salinan Indians, and the ACHP, when the ACHP has issued comments hereunder, with a copy of its final written decision regarding and objection addressed pursuant to this stipulation.

5. BLM may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

6. At any time during implementation of the measures stipulated in this MOA, should an objection pertaining to such implementation be raised by a member of the public, BLM shall notify the parties to the MOA, the SYBMI, and interested Indians in writing of the objection and take the objection into consideration. BLM shall consult with the objecting party and, if the objecting party so requests, the SYBMI, interested Indians, and the SHPO for no more than 15 days. Within 10 days following closure of this consultation period, BLM will render a decision regarding the objection and notify all consulting parties of its decision in writing. In reaching its decision, BLM will take into account any comments from the consulting parties regarding the

objection, including the objecting party. BLM's decision regarding the resolution of the objection will be final. BLM may authorize any action subject to objection under this paragraph to proceed after the objection has been resolved in accordance with the terms of this paragraph.

D. AMENDMENTS

1. Any party to this MOA, the SYBMI, and interested Chumash and Salinan Indians may propose that this MOA be amended, whereupon the parties to this MOA, the SYBMI, or interested Indians will consult for no more than 30 days to consider such amendment. The amendment process shall comply with 36 CFR §§ 800.6(c)(1) and 800.6(c)(7). This MOA may be amended only upon the written agreement of the signatory parties. If it is not amended, this MOA may be terminated by either signatory party in accordance with Stipulation VI.E.

2. Attachment 1 may be amended through consultation among the parties without amending the MOA proper.

E. TERMINATION

1. If this MOA is not amended as provided for in Stipulation VI.D., or if either signatory party proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other parties to this MOA, the SYBMI, and interested Chumash and Salinan Indians, explain the reasons for proposing termination, and consult with the other parties, the SYBMI, and interested Indians for at least 30 days to seek alternatives to termination. Such consultation shall not be required if BLM proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).

2. Should such consultation result in an agreement on an alternative to termination, then the parties, the SYBMI, and interested Indians shall proceed in accordance with the terms of that agreement.

3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other parties to this MOA, the SYBMI, and interested Indians in writing. Termination hereunder shall render this MOA without further force or effect.

4. If this MOA is terminated hereunder, and if BLM determines that the Undertaking will nonetheless proceed, then BLM shall either consult in accordance with 36 CFR § 800.6 to develop a new MOA or request the comments of the ACHP pursuant to 36 CFR Part 800.

F. DURATION OF THE MOA

1. Unless terminated pursuant to Stipulation VI.E., or unless it is superseded by an amended MOA, this MOA will be in effect following execution by the signatory parties until BLM, in consultation with the other parties, the SYBMI, and interested Chumash and Salinan Indians determines that all of its stipulations have been satisfactorily fulfilled. This MOA will terminate and have no further force or effect on the day that BLM notifies the other parties, the SYBMI, and interested Indians in writing of its determination that all stipulations of this MOA have been satisfactorily fulfilled.

2. The terms of this MOA shall be satisfactorily fulfilled within 15 years following the date of execution by SHPO. If BLM determines that this requirement cannot be met, the parties to this MOA, the SYBMI, and interested Indians will consult to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment or termination. In the

event of termination, BLM will comply with Stipulation VI.E.4 if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

3. If the Undertaking has not been implemented within two years following execution of this MOA by SHPO, this MOA shall automatically terminate and have no further force or effect. In such event, BLM shall notify the other parties, the SYBMI, and interested Indians in writing and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800.

G. EFFECTIVE DATE

This MOA will take effect on the date that it has been executed by SHPO.

EXECUTION of this MOA by BLM and SHPO, its transmittal by BLM to the ACHP in accordance with 36 CFR § 800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR § 800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that BLM has afforded the ACHP an opportunity to comment on the Undertaking and its effect on historic properties, and that BLM has taken into account the effects of the Undertaking on historic properties.

SIGNATORY PARTIES:

Bureau of Land Management

By_____ _____
Tim Smith Date
Bakersfield Field Manager

California State Historic Preservation Officer

By_____ _____
Milford Wayne Donaldson, FAIA Date
State Historic Preservation Officer

Piedras Blancas Light Station

Management Plan
and
Environmental Assessment

Recommended By _____ 10/24/07
James L. Boucher Date
Piedras Blancas Light Station Manager

Approved By _____ 10/24/07
Timothy Z. Smith Date
Bakersfield Field Office Manager