Cultural Resources Inventory and Evaluation Report for the Lehigh Southwest Land Exchange

Shasta-Trinity National Recreation Area
Shasta-Trinity National Forest
Shasta County, California

USGS 7.5-minute Quadrangles:
Project City 1997; O'Brien 1997

March 2013

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Reviewed by: ______________________________________   ___________________

Date
Management Summary

The Shasta-Trinity National Forest (STNF) proposes to exchange lands with Lehigh Southwest Cement Company (Lehigh) and approve a non-significant amendment to the STNF Land and Resource Management Plan (U.S. Forest Service 1995). The lands to be exchanged include two Federal parcels managed by the STNF near the Gray Rocks quarry on the south side of Shasta Lake, encompassing approximately 62.56 acres (ac.), and one private parcel owned by Lehigh on the east side of Shasta Lake at the McCloud River arm, encompassing up to approximately 243.94 ac. (acreage to be determined during land appraisal). Easements on Road 33N99 would also be exchanged as part of the land transfer to maintain access for each party across the lands. The lands and Road 33N99 are in the Shasta Unit of the Whiskeytown-Shasta-Trinity National Recreation Area on the STNF in Shasta County, California. The purpose of the exchange from private to Federal ownership is to consolidate National Forest ownership of lands in the Shasta Unit of the NRA and protect high quality plant and wildlife habitat along the McCloud Arm of Shasta Lake. This report details the archaeological investigations conducted in accordance with Section 106 of the National Historic Preservation Act for the Federal parcels (Area of Potential Effects). An additional architectural study of a quarry conveyor system on a portion of one Federal parcel was prepared by JRP Historical Consulting (McMorris 2012).

NSR conducted a record search through the California Historical Resources Information System to identify any previously recorded cultural resources and studies that might have been documented within or in the vicinity of the two Federal parcels. A mixed-strategy field survey of the Federal parcels was conducted in August 2012 by NSR archaeologists. No significant (per National Register of Historic Places criteria) cultural resources were documented as a result of the survey.

This document contains information about the nature and location of cultural resources. In accordance with Section 9 of the Archaeological Resources Protection Act of 1979 (16 U.S. Code [USC] Section 470hh) and Section 304 of the National Historic Preservation Act of 1966 (16 USC Section 470w-3), this information is privileged and is intended for limited distribution only.
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I. INTRODUCTION

The Shasta-Trinity National Forest (STNF) proposes to exchange lands with Lehigh Southwest Cement Company (Lehigh) and approve a non-significant amendment to the STNF Land and Resource Management Plan (U.S. Forest Service 1995). The lands to be exchanged include two Federal parcels (the Area of Potential Effects [APE]) managed by the STNF near the Gray Rocks quarry on the south side of Shasta Lake, encompassing approximately 62.56 ac., and one private parcel owned by Lehigh on the east side of Shasta Lake at the McCloud River arm, encompassing up to approximately 243.94 ac. (acreage to be determined during land appraisal). Easements on Road 33N99 would also be exchanged as part of the land transfer to maintain access for each party across the lands. The lands and Road 33N99 are in the Shasta Unit of the Whiskeytown-Shasta-Trinity National Recreation Area (NRA) on the STNF in Shasta County, California. The purpose of the exchange from private to Federal ownership would be to consolidate STNF ownership of lands in the Shasta Unit of the NRA and protect high quality plant and wildlife habitat along the McCloud Arm of Shasta Lake. This land exchange is proposed under the authority of the General Exchange Act of March 20, 1922 (16 U.S.C. § 485), as amended February 28, 1925 (16 U.S.C. § 486); the Federal Land Policy and Management Act of October 21, 1976, as amended (43 U.S.C. § 1716); and the Federal Land Exchange Facilitation Act of August 20, 1988 (43 U.S.C. § 1716 [note]).

In order to determine if the proposed land exchange between the STNF and Lehigh would have any adverse effects on properties currently listed or potentially eligible for listing on the National Register of Historic Places (NRHP), North State Resources, Inc. (NSR) was retained to conduct archival research and a field survey of the APE and initiate contact with the Native American Heritage Commission (NAHC) on behalf of the STNF. Documentation efforts were conducted by NSR cultural resources specialists Brian Ludwig, Ph.D., Kristina Crawford, M.A., and Mim Roeder, M.A. Dr. Ludwig, Ms. Crawford, and Ms. Roeder all meet the Secretary of the Interior’s Professional Qualifications Standards for archaeology (36 CFR Part 61).

Project Location

The Federal parcels proposed for exchange to Lehigh are located approximately 0.25-mile (mi.) south of the confluence of the McCloud River and Squaw Creek arms of Shasta Lake. Both parcels are on the O’Brien and Project City U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps in Township 33 North, Range 4 West; the westernmost parcel is in Section 3, and the easternmost parcel is in Section 2 (Figure 1).

Project Description

The STNF is proposing to exchange two parcels of Federal (STNF) land adjacent to an active limestone mine (Gray Rocks quarry) owned and operated by Lehigh for a private inholding of land along the McCloud River arm of Shasta Lake. Both the Federal and non-Federal lands proposed for exchange are within the boundaries of the Shasta Unit of the Whiskeytown-Shasta-Trinity NRA. The lands are in areas identified for possible exchange in the STNF Land and Resource Management Plan, and a non-significant plan amendment will be needed to identify management strategies for the acquired Federal lands. Easements on Road 33N99 through one
of the Federal parcels will also be exchanged as part of the proposed transfer to maintain access for each party across the lands.

Lehigh and its predecessors have operated the limestone mine for many years on private lands adjacent to the Federal lands. Lehigh currently holds two special use permits for the use of facilities that service the mine, including roads, a conveyor belt, power lines, and a concrete block storage building. The road leading to this Federal parcel is currently closed to the public for safety concerns due to the mining operation. The other Federal parcel is an isolated mineral fraction that is largely surrounded by Lehigh lands, and the only legal access for public use is by foot. The two parcels of Federal land comprise a total of 62.56 ac.

The private land was originally part of a railroad land grant and has been relatively inaccessible except by boat since the creation of Shasta Lake in 1958. Lehigh owns a larger parcel of approximately 400 ac., but only a portion of the land (up to approximately 243.94 ac.) is proposed to be transferred to the STNF. Lehigh will retain 153.60 ac. as a conservation easement with the State of California, Department of Fish and Game, to provide and protect high quality plant and wildlife habitat as mitigation under an Endangered Species Act Incidental Take Permit for activities on other Lehigh lands.

**Study Team**

NSR’s cultural resources staff conducted research for the Federal parcels being proposed for exchange according to current professional and legal standards. The study team consisted of professionally trained archaeologists and historians meeting the *Secretary of the Interior's Professional Qualification Standards* 36 CFR Part 61; 48 FR 44716 and technical support personnel. The following personnel were key participants in this research:

<table>
<thead>
<tr>
<th>Person</th>
<th>Position</th>
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<tbody>
<tr>
<td>Brian Ludwig, Ph.D.</td>
<td>Principal Investigator</td>
</tr>
<tr>
<td>Kristina Crawford, M.A.</td>
<td>Field Director</td>
</tr>
<tr>
<td>Mim Roeder, M.A.</td>
<td>Field Archaeologist</td>
</tr>
</tbody>
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**II. REGULATORY CONTEXT**

**Assessing Significance under Section 106**

Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800, as amended in 1999) requires federal agencies to consider the effects of their actions or those they fund or permit (i.e., an “undertaking”) on properties that may be eligible for listing on or are presently listed on the National Register of Historic Places (NRHP). To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing on the NRHP. Although compliance with Section 106 is the responsibility of the lead Federal agency (the STNF for this project) the necessary steps can be conducted by a qualified representative of the lead agency.
Project Location
Shasta County, California

Figure 1
Project Location - Federal Parcels

*Note: Parcel boundaries will be verified by a surveyor. The boundaries shown are approximate.
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The Section 106 review process involves a four-step procedure:

- Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.
- Identify historic properties by determining the scope of efforts, identifying cultural resources, and evaluating their eligibility for inclusion on the NRHP.
- Assess adverse effects by applying the criteria of adverse effect on historic properties (resources that are eligible for inclusion on the NRHP).
- Resolve adverse effects by consulting with the State Historic Preservation Officer and other consulting agencies, including the Advisory Council on Historic Preservation if necessary, to develop an agreement that addresses the treatment of historic properties.

The NRHP is a register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, state, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

a) are associated with events that have made a significant contribution to the broad patterns of our history;
b) are associated with the lives of persons significant in our past;
c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d) have yielded, or may be likely to yield, information important in prehistory or history.

Most prehistoric archaeological sites are evaluated with regard to Criterion D of the NRHP, which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from the deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values.

Site integrity is also a consideration for the NRHP eligibility of an archaeological locale. The aspects of integrity include location, setting, design, workmanship, feeling, and association. These may be compromised to some extent by cultural and post-depositional factors (e.g., highway construction, erosion, bioturbation), yet the resource may still retain its integrity for satisfying Criterion D if the important information residing in the site survives.

**U.S. Forest Service Land Exchanges**

As described in the U.S. Forest Service Land Exchange Handbook (FSH 5409.13), a land exchange may proceed after receiving SHPO concurrence on an archaeological inventory and evaluation report and if there are no significant heritage resources or sites on the Federal
property. Where potentially significant heritage resources or sites are found, a formal analysis should be conducted to determine eligibility for listing on the NRHP.

Sites that are determined eligible for NRHP listing must be dropped from consideration in a land exchange proposal or adverse effects to the site(s) have to be mitigated. Since mitigation costs for archeological and historic sites may be substantial, the authorized officer has the responsibility to take into account the potential costs related to future management and protection of newly acquired heritage sites.

Proposed mitigation measures shall be developed in consultation with the SHPO and Advisory Council on Historic Preservation. Commonly employed mitigation measures for exchanges include, but are not limited to the following:

- Recording of the site by mapping, photography, archival work, or architectural drawings.
- Recovering a sample of the scientific information present in a site by archeological excavation.
- Placing protective covenants on or reserving interests in the tract.
- Dropping tracts containing significant sites from an exchange and maintaining them in Federal ownership.

III. ENVIRONMENTAL AND CULTURAL CONTEXT

Natural Setting

Regionally, the APE is located on a dissected plain termed the Tehama Terraces subsection near the intersection of the Klamath Mountains, Cascades-Sierra Nevada Foothills, and Northern California Interior Coast Range geologic provinces (U.S. Department of Agriculture, Forest Service 1998).

The elevation within the APE ranges from a low of approximately 1,360 feet (ft.) above mean sea level (amsl) in the southwestern-most extent of the western parcel to a high of about 2,300 ft. amsl in the northeastern portion of the parcel. The topography of the APE is quite steep although lower-slope areas are present particularly in the western extents of both parcels. Current land use in the APE and general vicinity includes the alignment of Interstate 5 to the west, the shores of Shasta Lake to the north, and the limestone quarries and associated facilities on Gray Rocks between the two parcels.

Average air temperatures range from July highs of 95 degrees Fahrenheit (° F) and January lows of 38° F. Average annual precipitation is approximately 62 in.; most precipitation falls as rain between the months of October and April (Western Regional Climate Center 2011).

Geology and Soils

The *Geologic Map of California, Redding Sheet* (1962) indicates the geology of the APE and surrounding area is comprised of Pleistocene non-marine rocks (2.6 million years ago to 10,000 years ago) (State of California Department of Conservation, Division of Mines and Geology 1962). Soils in the APE consist of types typically found on steep slopes. In the eastern parcel, two soil types are found: Holland family/Holland family deep complex and limestone rock outcrop. The Holland family occurs on mountain backslopes with a slope between 40% and
60%. The parent material is residuum weathered from metasedimentary rock and/or residuum weathered from metavolcanics and/or granite. The typical depth to restrictive features (paralithic bedrock) is 26 in., and the soil is well drained. This soil type is found throughout the eastern parcel with the exception of a small area at the western extent within which the predominant soil type consists of limestone rock outcrop.

In the westernmost parcel, with the exception of a small area of limestone outcrop, the predominant soil type is Goulding family. Like the Holland family soils found in the easternmost parcel, the Goulding family occurs on mountain backslopes exhibiting slopes between 40% and 60%. The parent material is residuum weathered from metasedimentary and/or metavolcanic rocks. This soil is classed as being well drained with a typical depth to bedrock of 15 in.

**Flora and Fauna**

Within and in the vicinity of the APE, several plant communities have been documented. These include Montane Hardwood–Conifer, Montane Hardwood, Ponderosa Pine, and Closed-Cone Pine–Cypress, (Mayer and Laudenslayer 1988). The diverse plant life and faunal species supported by it would have made the general area attractive to Native Americans and to a certain extent the historic-era peoples who inhabited or were otherwise active within and near the APE.

- **Montane Hardwood–Conifer.** This vegetation community includes a variable mixture of conifer and hardwood overstory trees with an open to dense understory. Dominant conifer species include Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), gray pine (*P. sabiniana*), and knobcone pine (*P. attenuata*). Hardwood composition varies and includes California black oak (*Quercus kelloggii*), canyon live oak (*Q. chrysolepis*), and occasional interior live oak (*Q. wislizenii*). Shrub species and composition also vary and include whiteleaf manzanita (*Arctostaphylos viscida*), poison oak (*Toxicodendron diversilobum*), brewer oak (*Quercus breweri*), and California buckeye (*Aesculus californica*). The forb layer includes common hedge parsley (*Torilis arvensis*) and hedgehog dogtail (*Cynosurus echinatus*).

- **Montane Hardwood.** Montane hardwood habitat includes nearly pure to mixed stands dominated by various hardwood tree species with a variable understory. Dominant tree species include California black oak and canyon live oak. Shrub composition is variable, consisting of white-leaf manzanita, snowdrop bush (*Styrax officinalis*), deerbrush (*Ceanothus integerrimus*), and poison oak. The forb layer is sparse, consisting of hedge parsley and hedgehog dogtail.

- **Ponderosa Pine.** Dominant species include open to moderately dense stands of ponderosa pine with occasional Douglas-fir, gray pine, and knobcone pine. A few early to mid-seral stage sugar pines (*Pinus lambertiana*) also occur in the northern portion of the area. Dominant hardwoods include California black oak and canyon live oak. The shrub layer varies from open to dense and includes white-leaf manzanita, brewer oak, snowdrop bush, and poison oak. The forb layer also varies in density and includes hedge parsley and hedgehog dogtail.

- **Closed-Cone Pine–Cypress.** The closed-cone pine–cypress habitat consists of moderately dense knobcone pine stands. These stands also occasionally contain ponderosa pine and gray
pine. The shrub layer is moderate to dense and is dominated by white-leaf manzanita and poison oak. The ground layer varies and is dominated by various grasses and forbs.

A variety of mammals, birds, and reptiles are commonly found in these vegetation regimes. Some of the more common species include mule and black-tailed deer (*Odocoileus hemionus*), coyotes (*Canis latrans*), jack rabbits (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta’s pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*) and other rodents. Red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), various owl species, quail (*Callipepla californica*), acorn woodpeckers (*Melanerpes formicivorus*), mourning dove (*Zenaida macroura*), western scrub-jays (*Aphelocoma californica*), northern flickers (*Colaptes auratus*), western meadow lark (*Sturnella neglecta*), sparrow species and other birds can be found in the area as well. Reptile species such as western fence lizards (*Sceloporus occidentalis*), western skink (*Eumeces skiltonianus*), gopher snake (*Pituophis melanoleucus*), and common king snake (*Lampropeltis getula californiae*) also inhabit the region (U.S. Department of Agriculture, Forest Service 1998).

### Prehistoric Context

**Archaeological Investigations**

The most significant and earliest archaeological investigations relative to the APE occurred along the McCloud River (referred to as the McCloud River arm of Shasta Lake) adjacent to and immediately north of the APE and were often conducted with the question of the peopling of North America in mind. Potter Creek Cave, Samwel Cave, and Stone Man Cave (present-day Lake Shasta Caverns) on the McCloud River arm of Shasta Lake were investigated in the early 20th century by the University of California, Berkeley (Merriam 1906, Putnam 1906, Sinclair 1906). These investigations found stone tools and polished bone that may have been tools in close proximity to Pleistocene faunal remains, including extinct animal forms such as the Shasta ground sloth, leading the researchers to believe the artifacts were considerably older than they truly were (Moratto 1984). Later excavation work conducted in the 1960s in Potter Creek Cave found a 30-centimeter thick layer of cultural materials and a cache of an atlatl (spear thrower), atlatl dart foreshafts, and main shafts not associated with Pleistocene fauna (Payen and Taylor 1976). Radiocarbon and obsidian hydration tests to determine relative dates of the human deposit returned results dating around 2,000-3,000 years before present (B.P.) (Payen and Taylor 1976). The Pleistocene fauna were subjected to radiocarbon testing as well and returned results of around 8,000 B.P. Recent work using modern techniques has, however, returned dates of 17,000 to 23,000 years B.P. on the faunal remains from Samwel Cave, indicating the earlier test results may be incorrect (Feranec et.al. 2007).

During the 1930s to 1950s, plans for the creation of numerous reservoirs in California were undertaken, and in advance of reservoir construction, archaeological surveys and excavations were quickly and oftentimes haphazardly conducted (Moratto 1984). The first major survey undertaken in the watershed area was in the soon to be flooded area of modern-day Shasta Lake. Smith and Weymouth (1941 and 1942) identified 37 archaeological sites on terraces along the McCloud River and excavated three of these sites (Basgall and Hildebrandt 1989). Smith and Weymouth were able to ascertain the artifactual assemblages dated to the recent prehistoric and protohistoric eras, attributable to the ethnographically known Wintu occupation (Moratto 1984). Since the late 1960s, numerous cultural resources management studies have been conducted in
the general area resulting in detailed investigations of several archaeological locales important to
the understanding of the prehistory of the region. These included the Squaw Creek site (CA-
SHA-475) investigated by Clewett and Sundahl and the Sacramento River Canyon sites (CA-
SHA-1176, SHA-1175, SHA-1169, SHA-476) investigated by Basgall and Hildebrandt (1989).

Investigations occurred at the Squaw Creek site throughout the 1970s and early 1980s and
contributed to the formulation of a regional chronology (Moratto 1984). The site revealed a deep
deposit spanning a proposed 8,000 years of occupation, with the deepest of these deposits
yielding wide-stemmed projectile points similar to the Borax Lake type and a radiocarbon date of
approximately 7,500-6,500 years B.P. (Moratto 1984). Work conducted by Basgall and
Hildebrandt (1989) in the Sacramento River Canyon approximately 12 mi. west of the lower
McCloud River provided similar evidence for the early occupation of Shasta County, finding
wide-stemmed projectile points with large obsidian hydration rim readings, indicating a great
age. This evidence is still sparse and further work needs to be performed to add to the
archaeological record. The later occupations were well represented in both the Squaw Creek and
Sacramento River Canyon excavation, and these and other investigations in the larger region
have created a more complete picture of the prehistory of the lower McCloud River area.

Prehistoric Periods

Prehistory is often divided into the following periods:

• The Paleo-Indian Period (12,500 to 10,000 BP) is characterized by the warming period
  associated with the Pleistocene/Holocene transition seen throughout North America.
  Although evidence from this period is sparse, sites in northern California, including several
caves in the McCloud River drainage, exhibit the tool technology associated with Paleo-
Indian period, specifically the fluted projectile points similar to Clovis and Folsom projectile
point types that are found in the Great Basin (Moratto 1984). These projectile point types are
part of the hypothesized Big-Game Hunting Tradition evidenced across North America
during this period (Moratto 1984). The idea of this tradition, if indeed it ever existed, is more
than likely not entirely accurate. Although some big-game hunting no doubt occurred during
this time, archaeological evidence suggests that the Paleo-Indian subsistence patterns and
overall lifeways were far more varied and exploited the full range of available floral and
faunal resources available to them.

• The Early Holocene Period (10,000 to 8,000 B.P.) is a period of global deglaciation in the
  northern hemisphere, creating warmer and drier climates. Projectile point sequences are
dominated by large stemmed forms subsumed under the Great Basin Stemmed series in the
area spanning the Southern Cascade Mountains and the Northern Sierra Nevada Mountains
(Hildebrandt and King 2002). In addition to projectile points, bifaces, scrapers, large cores,
and crescent forms are often found in deposits from this period, with very few manos, milling
stones, and other food processing tools in association (McGuire 2002). Obsidian sources for
these tools and projectile points are found over 100 mi. away from the APE suggesting a
highly mobile population (McGuire and Nelson 2002).

• The Early Archaic Period (8000-5000 B.P.) marks a period of change in climate that is
  wetter, as well as a shift in subsistence patterns and land-use by prehistoric populations.
  Occupation sites begin to shift from lake shores and marshes to perennial waterways and
springs, and there is a marked increase in milling equipment located in the site assemblages
(McGuire and Nelson 2002). Often discussed as the Borax Lake Pattern, large lanceolate, corner-notched, and wide-stemmed projectile points and unifacial implements characterize the tool assemblages from this time. It is likely that these points were hafted onto large darts or spears used in conjunction with the atl-atl (spear thrower). There is evidence of increased use of vegetal materials, specialized processing techniques, and cultural elaboration (McGuire and Nelson 2002).

- The Middle Archaic Period (5000 to 3000 B.P.), often discussed as the Squaw Creek Pattern for the Redding/Upper Sacramento Valley area, saw continued use of manos (handstones) and metates (milling slabs), and the introduction of the mortar and pestle. Stone tool forms include contracting stem projectile points (Squaw Creek Series), unifacial flake tools (McKee Uniface), awls, and wedges from a wider variety of obsidian sources. Atlatl weights imply use of the spear thrower as the primary hunting weapon, and net weights and fish hooks imply an increased reliance on fishing (Basgall and Hildebrandt 1989). During this time, California began to experience more rainfall and a re-establishment of glaciers at the upper elevations in the Sierra Nevada (Minnich 2007). Recent research in eastern Shasta County indicates current vegetation regimes began to develop 2,200 years ago (Anderson et al. 2008).

- The Late Archaic Period (3000 to 150 B.P) includes two distinct patterns, the Whiskeytown Pattern and the Augustine Pattern:

  **The Whiskeytown Pattern** (3000-1700 B.P.) sees the continuation of atlatl use as a hunting weapon. Small to large side-notched and corner-notched darts are the most common form of projectile point. Manos and metates remain in use, and there is an increase in mortar and pestle use indicating an increased focus on acorn as a staple resource.

  **The Augustine Pattern** (1700-150 B.P), at times referred to as the Shasta Aspect or Shasta Complex for the Redding/Upper Sacramento Valley area, is marked by the introduction of the bow and arrow and the adoption of the hopper mortar and pestle (Johnson and Theodoratus 1984, Moratto 1984). Small projectile points (Gunther series, Desert Side-Notch series) suitable for arrow tips are found with increasing frequency in archaeological contexts. Hopper mortars, indicative of intensive use of acorn, become the dominant milling equipment. Manos and milling stones are used infrequently. The reliance on acorn and river resources such as salmon leads to the development of food preservation and storage (e.g. granaries). Well-established trade networks are in use as evidenced by obsidian from distant sources as well as coastal shell beads. Clamshell disc beads, spire lopped Olivella beads, and Haliotis ornaments and pendants are common forms of ornamentation. This pattern is associated with ethnographically known peoples.

**Prehistoric Setting of the Lower McCloud River Area**

The McCloud River watershed lies in the convergence of the Klamath Mountains, Cascade Range, and Great Valley physiographic provinces (United States Geological Survey 2007). Prehistorically, several climate shifts have created a varied prehistoric landscape within the watershed. West (1989) describes a warmer and drier climate before 3,500 years B.P. creating a “richer, more productive resource base” in the higher elevations above the McCloud River (West
This climate would have allowed for an oak woodland forest to exist within the canyon in a much larger area than found today (West 1989). The many rivers and creeks provided a substantial amount of water as well as many of the freshwater resources such as fish and mussels that were used by local people prehistorically and ethnographically. Among the major plant resources recorded in prehistoric contexts as well as in ethnographic contexts are acorns, pine nuts, bulbs and corms, a variety of seeds, and manzanita (Basgall and Hildebrandt 1989). Present climate, hydrology, and biotic patterns may not accurately reflect past environmental conditions along the lower McCloud River. Areas that currently appear as a marginal environment may have been a productive location in the past, and areas that are presently productive may have been marginal.

**Ethnographic Context**

Although the ethnographic record is incomplete and open to some interpretation, two ethnographic-era Native American groups appear to have considered the APE and the surrounding lands as being within their traditional territory: the Wintu and the Okwanuchu.

**The Wintu**

The Winnemem band of the Wintu Tribe occupied the lower McCloud River and Squaw Creek drainages as well as the area around the confluence of the Pit, Sacramento, and McCloud Rivers (DuBois 1935). At the time of contact with Euro-Americans, they were a semi-sedentary, foraging people living in permanent villages near rivers and streams (DuBois 1935). DuBois, in her ethnographic work about the Wintu, mentions a another group, the Waimuk, whom her informant describes as having lived in upper Sacramento River watershed and McCloud River around present-day Dunsmuir and McCloud, but that they no longer existed (DuBois 1935). DuBois (1935) identifies the Waimuk, based on language and territory, as the Okwanuchu, discussed in more detail below.

Prior to the sustained settlement of Euro-Americans in northern California, the Wintu adopted dense settlement patterns and were politically organized into independent tribelets, with the largest villages containing about 250 people (DuBois 1935). Settlements contained conical bark houses or temporary brush shelters in the summer, domed brush sudatory and menstrual huts, and a large earth covered semi-subterranean circular lodge for gatherings (LaPena 1978). The pre-contact population of the Wintu is estimated at around 14,250 (LaPena 1978). Ethnographers noted the primary diet of the Wintu consisted of deer, rabbits, and other small mammals; fish including salmon, steelhead, Sacramento sucker, freshwater shellfish, and lamprey; grasshoppers, salmon flies, and other insects; acorns, pine nuts, and buckeye; manzanita berries and other berries; *Brodiaea* sp. and other bulbs; clovers, miner’s lettuce, and other greens; and grass seeds. In general sturgeon, dog, bird eggs, and angleworms were not eaten (DuBois 1935). In addition to eating the fresh fish, the Wintu preserved salmon by drying it for use throughout the year. Dried salmon was processed into salmon flour and used in a variety of ways. Communal fish drives, usually salmon or steelhead, were conducted at night in the McCloud and Sacramento Rivers and entailed the use of large nets stretched across the river with people bearing torches, wading and swimming downstream to corral the fish (DuBois 1935). The fish drives brought together many communities providing opportunities for trade and social networking, including the parsing out of the catch among the people and villages involved (DuBois 1935).
Wintu religion and mythology were intimately involved with the environment, made concrete by all features of nature possessing historic, mythological, and religious importance. Places of unusual configuration such as distinctive outcrops of rock (for example, see Gray Rocks below), caves, mountains, and whirlpools might be considered “holy,” of special importance, or the dwelling places of spirits (Ritter and Burcell 1995). Many modern Wintu peoples believe very strongly in the sacredness of certain environmental features; although many locations have been lost to time, have been forgotten, or, for a variety of reasons, have not been revealed to ethnographers, archaeologists or land managers (Ritter and Burcell 1995; Hayward 2008; Sinclair 2008; Root 2008).

The first reported contact that the Wintu had with Euro-Americans occurred in 1826 and 1827 when expeditions of Hudson’s Bay Company trappers and traders led by Peter Skene Ogden and Jedediah Smith made forays into the region (Quint 1960). The discovery of gold by Pierson B. Reading on Clear Creek and at the mouth of Reading’s Creek on the Trinity River in 1848, and the creation and settling of Shasta County in 1850 and Siskiyou County in 1852 created a hotbed of culture clashes. After the opening of the northern mines in western Shasta County and Trinity County the large influx of miners and settlers pushed many of the Wintu in Trinity County to settle elsewhere. Many of them moved from the Trinity River watershed into the upper Sacramento River watershed in the area of modern-day Dunsmuir and Upper Soda Springs (Masson 1966). The Winnemem also moved into parts of the upper McCloud River watershed during this time, following the extinction of the Okwanuchu. Although much of the Wintu territory was overrun with miners and other opportunistic Euro-Americans, the McCloud River was left largely untouched due in part to a lack of easily mined materials and the ruggedness of the terrain (Yoshiyama and Fisher 2001), as well as the resistance of the Wintu to incursions into their territory.

**Okwanuchu**

Very little is known of the Okwanuchu aside from territorial information, a brief vocabulary, and a few mentions of the group in the ethnographies of the neighboring Wintu and Shastan peoples (DuBois 1935, Kroeber 1925, Silver 1978). The Okwanuchu spoke a unique dialect of the Shastan language which was part of the larger Hokan language family found in many places throughout California. Okwanuchu contained elements of Wintu and Achumawi, suggesting long-term interactions between these groups. DuBois in her discussion of the **Waimuk**, whom she equates with the Okwanuchu, notes the blending of languages and “considers them a transition people among whom one tribal unit gradually faded into another” (DuBois 1935: 8).

The Okwanuchu occupied a territory from the confluence of Squaw Valley Creek and McCloud River north to the foot of Mt. Shasta and the upper watershed of the Sacramento River (Kroeber 1925). The Okwanuchu were bounded on the north by the Shastan peoples, on the south by the Nomtipom and Winimen (Winnemem) Wintu, and on the east by the Achumawi.

It is estimated the Okwanuchu population before Contact was around 200 to 300 people, with no surviving speakers of the language by 1918 (Kroeber 1925). Several reasons for this population decline have been suggested such as epidemic disease and warfare. A known epidemic presumed to be malaria swept through much of northern California in 1832, killing large numbers of people throughout the region (Cook 1976). Open warfare between Native American groups, interpersonal violence, and the violence associated with contact between Native American and Euro-American groups is a more likely factor in the population decline of the
Okwanuchu. For instance, DuBois mentions an informant had stated the *Waimuk* joined with the Shastan peoples during the Modoc War in 1872-1873 and were later killed by the Modoc in a “retaliatory raid” (DuBois 1935: 8). Although no speakers of the Okwanuchu language were found in the early 20th century, it is possible that members of this group had intermarried with or immigrated into surrounding groups so that descendants of the Okwanuchu may still be living.

**Gray Rocks**

Although it has not been formally documented as a cultural resource, the Gray Rocks formation is a location of some cultural and spiritual significance to the local Native American community. Evidence for the cultural importance of the mountain and surrounding area can be found in a letter from the Winnemem Wintu Tribe sent to the STNF, which refers to the “…mountainous area known as Grey Rocks is a place that is held in high importance by the Winnemem people” (Schmidt, personal communication 2013). At least one contributing element about the importance of Gray Rocks and the surrounding area to the Wintu may stem from the presence of an apparently sizable Native American cemetery at the base of the mountain where the Baird Hatchery once stood (see Photo 1).

![Photo 1. 1897 photo of the Baird Hatchery showing Mount Persephone (Gray Rocks) in the background](Photo courtesy of University of Washington – Fresh Water and Marine Image Bank 2013)
Hedgpeth (1941) discussed the work of Livingston Stone, who founded the Baird Hatchery, and the impending construction of Lake Shasta. Hedgpeth stated that “… not only will the site of the hatchery be under nearly 300 feet of water, but the remains of the faithful Indians who worked at the hatchery will be exhumed as well to be reinterred in some other ‘last’ resting place.” Based on Stone’s journals, Hedgpeth provides additional references concerning Native American use and the possible cultural significance of Gray Rocks:

…after turning around the base of a little knoll on which the Indians buried their dead, ran quietly by a sand-bottomed cove. Here the Indians waded out to the white water of the rapids to spear the salmon as they cleared the shallow bar, and behind the cove was the camp ground, a shoulder of a hill, pitted by the fire holes of countless generations. When Livingston Stone first saw this scene on August 30, 1872, the season was already far gone and he and his two young assistants, Myron Green and Willard T. Perrin (his nephew), set to work without delay. They had hoped to enlist the aid of the Indians but found that few of them knew any English, and being unable to communicate with them they had to build the station by themselves.

Drawing from Stone’s work, Hedgpeth provides numerous accounts of the Wintu’s use of the area around Mt. Persephone, and it was clear that the river confluences in the vicinity were prime fishing areas of great significance to the local Native Americans. Consequently, some of Stone’s initial efforts at establishing the Baird Hatchery were greeted with skepticism (Hedgpeth 1941:9):

Stone and his two assistants left for the McCloud River to begin the second season of egg taking. They arrived the next day to find the Indians resentful over this usurpation of their traditional fishing grounds, and it was not until they understood that the fish were to be turned over to them after the eggs had been taken that they became reconciled to the new order of things. There must have been other tense moments during this season, and we find Stone writing in his report that the “Indians had until this time succeeded in keeping the white man from their river…

In addition to the importance of Gray Rocks and its immediate vicinity to the Wintu’s fishing practices, the area at the base of Mt. Persephone near the Baird Hatchery may have figured prominently in a local manifestation of the “Ghost Dance” cultural revitalization movement that was spreading among Native American tribes during the latter decades of the 19th century (Hedgpeth 1941:12):

…during the season of 1878, there was an Indian scare, a local threat of intertribal war between the McCloud and Yreka Indians, probably part of the great Ghost Dance disturbance of 1878, which made the men at the hatchery so nervous that Stone telegraphed for arms and ammunition.

Although the majority of perceived threats from the local Native Americans proved to be nothing more than exaggerations and hysteria, the Wintu suffered greatly during the latter decades of the 19th century. However, a great many continued to live in the area of Mt. Persephone including those photographed by Thomas Houseworth in 1882 (see Photo 2) and presently archived at the Smithsonian Institution’s National Anthropological Archives.
The Gray Rocks area continued to be an area of great importance to the local Wintu peoples throughout the 19th century as evidenced by period accounts and the long history of Native American fishing along the rivers in the area. Gray Rocks also played an important role in the development of Euro-American settlement and industry of the region. According to Smith (1999), the immediate Gray Rocks area was also referred to as McColl and was a railroad siding during the early 20th century no doubt serving the limestone quarries and mines that had been established in the vicinity. The formation itself was previously known as Mt. Persephone but was later referred to as “Gray Rocks” due to the prominent gray-hued limestone prominence. Limestone has been quarried from Mt. Persephone and the surrounding area since at least the early 20th century (see Historic-era Context below).

**Historic-Era Context**

Uses of the lower McCloud River watershed during the historic-era began with the exploitation of animal and fish resources, particularly fur-bearing animals, in the early 19th century. Subsequent recreational hunting and fishing, mining, and timber pursuits have also taken place in the region and have largely defined the economy and character of the region. For further
information on other aspects of local and regional history refer to the architectural evaluation report prepared by JRP Historical Consulting (McMorris 2012).

**The Fur Trade and Early Exploration: 1820-1848**

No records or accounts of trapping relative to the Lower McCloud River arm of present-day Shasta Lake appear to exist. However, the trapping activities along the upper Sacramento River watershed are well-documented and typified the character of early-mid 19th century trapping and trading in northern California. These expeditions had far-reaching consequences for the Native American populations and the subsequent Euro-American settlement of the region.

The earliest known use of the upper Sacramento River watershed by Euro-Americans occurred in the early 19th century. The Hudson’s Bay Company’s Southern Brigade trappers and traders, led by Alexander Roderick McLeod, John Work, Michael Laframboise, Thomas Mckay, Peter Skene Ogden, and others, worked their way through much of northern California between 1826 and 1845 (Mackie 1997). Headquartered in Fort Vancouver in modern-day Washington, the Southern Brigade was organized to focus the fur trapping endeavors of the Hudson’s Bay Company on modern-day southern Oregon and California (Mackie 1997). John Sutter, an early settler who received a Mexican land grant in 1840 at present-day Sacramento, recounted a visit of the Southern Brigade in the lower Sacramento Valley as being of sufficient size that “when they pitched their tents it was like a village” (Dana 1934, Mackie 1997).

The goal of the trapping parties was primarily beaver pelts, although they would take otters and other fur bearing mammals of economic value when encountered. The reason for this narrow focus on specific furs was in large part due to a fashion trend for felt hats that began in Europe in the 17th century (Ray 1999). As demand for felt hats increased, more and more regions and people became enmeshed in the fur trading economic system, and as animal supplies were depleted in a given area, more and more regions were exploited, thus drawing “diverse regions into a single economic network, which, in turn, was linked to the expanding world economic system centered in Western Europe” (Ray 1999: vi). This “world economic system” became focused on the upper Sacramento River watershed by the early 19th century and brought with it extreme changes to traditional Native American lifeways, as well as habitat changes brought about by the wholesale removal of animals important in the functioning of the environment.

**Fisheries: Native American and Euro-American History and Use**

The Native Americans in the lower McCloud River watershed exploited a diverse array of resources available throughout the region. Fish including salmon, steelhead, Sacramento sucker, freshwater shellfish, and lamprey taken from rivers and creeks were an important part of their diet. Communal fish drives of salmon or steelhead were conducted at night in the McCloud River and entailed the use of large nets stretched across the river with people bearing torches, wading and swimming downstream to corral the fish (Dubois 1935). The fish drives brought together many communities providing opportunities for trade and social networking, including the parsing out of the catch among the people and villages involved (DuBois 1935).

When the northern mines were opened, and settlers began pouring into the region, they found rivers packed with fish. After the discovery of gold and the opening of the northern mines, laws regulating the hunting and capture of various game and fish were quickly implemented by the recently established State of California. In 1852, the Act to prohibit the erection of Weirs, or other obstructions, to the run of Salmon (1852 Cal. Stat. ch. 62) was passed to regulate the
commercial and recreational fishing of salmon (Johnston-Dodds 2002). The act exempted Native Californian tribes from this ban and allowed them to fish in their traditional manner; however, they were often excluded from fishing by other fishing concerns and a general decline in fish populations in the late 19th and early 20th centuries. Early laws regarding game and fish were rarely, if ever, enforced, and unrestrained fishing, coupled with the environmental destruction caused by hydraulic mining and the construction of railroads, led to a severe decrease in fish in the streams and rivers of California (Lufkin 1990). As a means of improving fisheries, especially commercial and game fish, and enforcing laws, the Board of Fish Commissioners was created in 1870 (Leitritz 1970). The Board was tasked with creating “fish breederies” for stocking streams and lakes and general habitat improvement (Leitritz 1970).

One of the earliest fish hatcheries in California was the Baird Hatchery (named for Spencer Fullerton Baird; the first U.S. Commissioner of Fisheries) built on the lower McCloud River near the confluence of the McCloud, Pit, and Sacramento Rivers (Figure 2). Established in 1872, this was the first public salmon breeding station in California and on the West Coast (Leitritz 1970). In 1884, the hatchery was closed due to diminishing returns; however, it was reopened in 1888 to supply the new hatchery that had been established near present-day City of Mt. Shasta and remained in operation until 1935 when construction of the Shasta Dam began (Leitritz 1970). During its operation, the hatchery packed and shipped salmon eggs to many places across North America and to such far places as New Zealand (Stone 1878).

The building of Shasta Dam created a major change in the fisheries in the McCloud River watershed. The salmon runs that accessed the many tributaries of the McCloud River were now prevented from migrating upstream, and the flow of cool water downstream was curtailed (U.S. Bureau of Reclamation 1994). Although salmon are now excluded from the lower McCloud River, the river supports varieties of trout favored by sport anglers and is currently considered to be a “blue ribbon” fish stream (Pacific Gas & Electric Company 2006).

Mining and Timber Extraction

In the early years of the 1840s, word of the apparent fertility and wealth in land and resources available in California, accompanied by the weakening control of the territory by the Mexican government, prompted many people to emigrate (Cleland 1922). These early groups of émigrés organized themselves into parties electing a captain who knew the route or held a high social status. In 1843, the Chiles-Walker party entered California, and Pierson B. Reading, a man who would have significant impact on Shasta and Trinity County history, was a member of this party (Cleland 1922). In 1844, Reading was granted the 26,633-ac. Rancho Buenaventura land grant from the Mexican government located in the area of modern-day Redding, just south of the upper Sacramento River watershed (Bancroft 1890). Most of the early settlement in California was located along the Pacific Coast and in the Sacramento Valley, and Reading’s land grant was the most northerly of the Mexican grants. The McCloud River watershed remained unsettled and relatively unexplored until after 1848. The discovery of gold in 1848 at John Sutter’s sawmill in Coloma on the American River opened the floodgates of immigration with nearly 100,000 people moving to California by 1849 and nearly 250,000 people by 1852 (California State Parks 2007).

In 1848, after visiting the land in the vicinity of Coloma, Reading realized the geologic similarity between his land along the Sacramento River and the gold bearing regions of the Sierra Nevada foothills (Hittell 1898). Reading began prospecting in the Redding area, with a crew of Native
Americans, discovering gold five or six mi. up Clear Creek from its confluence at the Sacramento River (Bancroft 1888). Reading also discovered gold at the mouth of Reading’s Creek on the Trinity River near present-day Douglas City. Along with a crew of “three white men, one Delaware, one Chinook, and about sixty Indians from the Sacramento Valley,” and a good supply of cattle and provisions, Reading worked the placer gravels for about six weeks, recovering 80,000 dollars of gold. Reading’s discovery of gold in the foothills and mountains west of the Sacramento River signaled the opening of the northern mines and created the impetus for a large influx of miners and settlers into the McCloud River watershed. Gold mining continued intermittently throughout the 19th and early 20th centuries, but by the 1890s, the main economic focus of mining in Shasta County had shifted to copper (California State Mining Bureau 1915).

With the opening of numerous copper mines and prospects, the industry flourished in Shasta County from the 1890s until the Great Depression when large scale mines became too expensive to operate. Some copper prospecting occurred at Gray Rocks in 1902 at the Bismark claim (outside of the APE). The ore deposits of the claim were worked by the Black Diamond group owned by Mr. Jesse Brown of Redding through a limited series of open cuts and a main adit 2,000 ft. long. Little additional information appears to be available regarding this particular operation (Lydon and O’Brien 1974).

The intensity of copper mining in the county varied but one of the “boom” periods occurred during World War I when it was required for munitions and other materials associated with the war effort. One large copper prospect in operation during this time was situated about a mi. and a half northeast of Gray Rocks by the Pit River Consolidated company (Shasta Copper Company) between 1916 and 1917. The Shasta Copper Company worked a total of 38 claims in this area which is now largely inundated by Shasta Lake. One thousand tons of ore were removed from several short adits but it appears the ore was of mixed content and quality and the mine shut down in 1917 (Lydon and O’Brien 1974: 135). After WWI, the decreased demand for copper, coupled with litigation over environmental damage caused by smelting, and the high cost of shipping the ore to other locations for refining caused many of the copper mines to close.

Like other mineral production in Shasta County, copper was mined sporadically during the Great Depression and again during World War II (Elliott 1991).

The mining industry required vast quantities of lumber to build and maintain its infrastructure. This need spurred the development of the timber industry in the 19th century which remained an integral part of the McCloud River watershed area well into the 20th century. Small sawmills and timber harvesting concerns of the late 19th century were often placed in close proximity to the market for their product, or adjacent to major arteries of transportation. When the harvestable trees were cut out of an area, these small sawmills were easily moved to a new location. Rugged, steep terrain with few access routes throughout much of the study area deterred many lumber companies from moving into the McCloud River canyon. Instead, the more easily accessible and somewhat gentler topography that supported commercially viable contiguous stands of timber located in the upper McCloud watershed north of the APE was harvested in the late 19th and early 20th centuries. The construction of the railroad in 1887 between Redding and the Mount Shasta area via the Sacramento River canyon providing easier transport of logs and wood products out of the region encouraged some lumber companies to expand their timber harvest operations further into the hinterlands. Flumes, steam donkeys, and narrow gauge railroads were used to move logs out of the surrounding mountains to mills or railheads.
As industrial-scale logging became the norm in the region, it became apparent that better protections were needed for vital natural resources and landscapes in the region. In order to better manage natural resources in general and the timber industry in particular, the Shasta-Trinity National Forest, the largest in California, was established by President Theodore Roosevelt’s proclamation of 1905. Initially, there were two forests; the Trinity National Forest (headquartered in Weaverville) and the Shasta National Forest (headquartered in Mt. Shasta City). The Shasta National Forest and the Trinity National Forest were administratively combined in 1954 and officially became the Shasta-Trinity National Forest. In 1905, the first timber sale under the new Forest Service agency occurred on what was then called the Shasta Reserve. This set the precedent for private exploitation of managed timber lands in the Shasta and Trinity national forests.

The years following World War II mark a turning point in the federal government’s management of forestlands in northwest California. Increased demand for lumber and dwindling timber supplies on private lands made logging on federal lands more economically attractive than at any other time during the early decades of the 20th century (Frost and Sweeney 2000). Technological advances, such as lighter weight chainsaws and yarding systems and the construction of an extensive network of forest roads, made logging possible in areas, including the along the McCloud River, once considered unprofitable or inaccessible (Frost and Sweeney 2000).

**The Central Valley Project and Shasta Dam**

Although fur trapping and trading, mining, and logging pursuits all played major roles in the development of the economic, social, and physical characteristics of the APE and the Shasta County region, no single event had quite the impact as did the construction of the Shasta Dam. The dam was the keystone of the Central Valley Project, which was approved and funded by the U.S. Congress in 1935 (Stene 1996).

Construction activities on Shasta Dam and associated infrastructure enticed workers into the area long before actual dam construction started in 1938 (Stene 1996). Many were crews from the U.S. Bureau of Reclamation and construction workers from previous government projects in other states; others were men who had not had jobs for years in part due to the Great Depression. Shasta County’s economy, already in a slump with the closing of once-active copper smelters after World War I, was hard-hit by the Great Depression. The dam project was a huge economic boon for the region. Land developers hurried to lay out lots in new subdivisions, offering cheap residential and business lots (Rocca 1988). Several “boomtowns” quickly developed to support the construction activities and provide services and housing for the workers.

Construction of the dam was completed in 1945, and although it was expected that the boomtowns would be temporary, they and the surrounding area maintained a stable population. Many workers stayed on until the dam was dedicated and the land behind the dam inundated (Shasta Lake) in 1950. While some sold their homes and left the area, others remained and found employment in Shasta County’s growing timber industry (Rocca 1988). The nationwide post-war building boom and the popularity of plywood and particleboard as building materials brought new economic prosperity to Shasta County. Several new lumber mills were built and lumber-related businesses established. Better roads allowed workers to commute to jobs in the mills in Redding and Anderson. The continuing Central Valley Project, expanding hydroelectric power generating projects, and a growing recreation industry offered a more diverse economic base for the area (Rocca 1988). Temporary shacks were replaced by more substantial homes,
and following WWII, active real estate trading by land developers in the Central Valley area resulted in property being traded among multiple owners prior to building (Rocca 1988). This pattern of land ownership and patenting is common for the larger area encompassing the small boomtowns and coincides with the national pattern of post-WWII population movements away from the inner cities into suburbs. More recently, rural residential and commercial in-fill provided the major impetus for development in and around the APE.

**Limestone Extraction and the Lehigh Southwest Cement Company**

This section discusses limestone extraction and the Lehigh Southwest Cement Company and was extracted from the architectural evaluation report (McMorris 2012).

Of particular interest to the APE is the history of limestone quarrying in Shasta County. With historic and ongoing quarrying operations occurring immediately adjacent to the APE parcels, the overall landscape along with natural and cultural resources have been affected by the quarrying operations since at least the early 20th century. Limestone was processed for use in a wide range of industrial uses ranging from steel production to agriculture, and quarries were common in Shasta County, including in the vicinity of the APE. General assessments as to the suitability of Shasta County limestone for extraction, processing, and use were expressed by Logan (1947), who stated that:

> High-calcium limestone probably occurs in greater abundance in Shasta County than in any similar area in California, and much of it is easily accessible from present roads. The limestone extracted from the deposits has been limited to that needed for local uses, because of the distance from large consuming centers. If really cheap electric power is made available from Shasta Dam there should be a good possibility of developing industries in the county that can utilize at least part of the immense beds of high-calcium limestone. The presence of large deposits of lignite or sub-bituminous coal is also a factor worth considering, as it offers a cheap local fuel.

Four major belts of limestone are present in the Klamath Mountains province in Shasta County; each of which trends roughly north to north-northeast. The largest of these constitutes the McCloud Limestone belt within which the Calaveras Cement Company (presently the Lehigh Southwest Cement Company) operations at Gray Rocks are situated. Calaveras Cement Company began scouting locations in northern California for a cement plant in the early 1950s, and in 1957, it began evaluating sites in Shasta County. Three diamond-drill holes were put down at Gray Rocks, including one about 500 ft. deep, by the end of that year. Early in 1958, the company acquired 550 ac. at Gray Rocks, and by the end of the following year, it had purchased an additional 650 ac. near Mountain Gate, some 12 mi. north of Redding.

In September 1959, Calaveras Cement merged with the Flintkote Company, and two months later plans were announced for construction of a 15-million dollar, dry-process cement plant. By April 1962, the production rate of the plant had reached 85 percent of its annual capacity of 1.5 million barrels of cement. Limestone employed in the manufacture of cement is obtained from the quarry on Gray Rocks, a mile northeast of and about 1,250 ft. higher in elevation than the plant. The limestone is crushed and discharged down a 550-ft. long by 8 ft. wide vertical shaft. From there, the rock is fed continuously onto a 36-in. rubber conveyor belt 7,540 ft. long that moves it to a surge pile immediately north of the cement plant. The belt passes first through a
740-ft. adit 10 ft. wide and then through an inverted-channel, covered, all-weather structure made of pre-stressed concrete slabs mounted on pre-stressed concrete piers for the rest of its journey. The belt consists of three sections meeting at two transfer houses. The largest section, weighing 60 tons, is notable for dropping a vertical distance of 513 ft. in a horizontal distance of 4,400 ft., likely one of the most precipitous drops made by any large conveyor belt system in the United States. Downward movement of the belt is utilized to generate 185 kilowatts of power, which helps to operate the primary crusher. Ten tons of limestone is delivered to the surge pile each minute by the belt, which moves at a rate of 5 mi. per hour. Limestone is belt-fed from the surge pile to secondary and tertiary crushers that reduce the particle size of the rock first to two inches (in.) and then to 5/8 of an in. It is then moved to large piles in the raw storage building for subsequent processing (Lydon and O’Brien 1974).

IV. STUDY METHODOLOGY

Pre-Field Research

Archival research for the project consisted of a record search conducted by NSR at the Northeast Information Center (NEIC) of the California Historical Resources Information System. This record search included but was not necessarily restricted to a review of the following sources:

- National Register of Historic Places (updates through June 2010)
- California Register of Historic Resources (updates through June 2010)
- California Historical Landmarks (updates through June 2010)
- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976)
- Mapping Project: Ethnographic Inventory, Shasta-Trinity National Forest, Mendocino National Forest (Corning and Stoneyford Ranger Districts) and Redding Resource Area (Theodoratus 1985)
- Historic Properties Directory (updates through June 2010)
- General Land Office Plat maps
- Historic USGS topographic quadrangles

The NEIC record search demonstrated that a total of five cultural resources investigations had been conducted within and adjacent to the APE (Table 1). No prehistoric or historic-era cultural sites, features, or artifacts were identified within the APE by these studies.

<table>
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<tr>
<th>NEIC Report No.</th>
<th>Date</th>
<th>Title</th>
<th>Author</th>
<th>In/Out of APE</th>
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<td>2002</td>
<td>Archaeological Inventory Survey – Calaveras/ Lehigh Cement Company’s Southwest Waste Rock Project, c. 50 Acres near the Gray Rocks Quarry, Shasta County, California</td>
<td>Peter M. Jensen, Sean M. Jensen</td>
<td>Out</td>
<td>No resources in APE</td>
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Native American Consultation

On behalf of the STNF, NSR contacted the NAHC to request a review of their Sacred Lands file and a list of appropriate regional Native American representatives and tribal organizations. This information was forwarded to the STNF to assist in their initiation of consultation under Section 106 (Appendix B).

Field Techniques

Field survey methods were consistent with the Secretary of the Interior’s Standards and Guidelines for Identification of Cultural Resources and Professional Qualifications (National Park Service 1983).

On August 14, 2012, NSR archaeologists conducted a pedestrian survey of the APE and a 150-ft buffer around the two Federal parcels. For the westernmost parcel, a mixed survey strategy was employed, combining an intuitive approach in areas exhibiting extremely steep terrain with intensive techniques used in accessible and low-slope areas. NSR archaeologists followed logging skid trails, unpaved roads, dozer pushes, and connecting ridges and terraces. Approximately 75 percent of the westernmost parcel was surveyed using this approach; the remaining 25 percent could not be accessed due to steep inclines, dense understory vegetation, and hazardous accumulations of layered deadfall (i.e., “jackstraw”). Dirt tracks, rodent burrows, animal trails, and other areas of exposed soil that might indicate the presence of cultural resources were closely examined for soil discoloration and/or artifacts.
Due to access difficulties ( unmaintained and overgrown access road), extremely dense vegetation and deadfall, and dangerously steep terrain, the easternmost parcel was subjected almost entirely to intuitive levels of survey. As with the westernmost parcel, accessible areas with mineral soil visibility, such as logging skids and rodent burrows, were examined for traces of cultural activities. However, in general, the easternmost parcel could not be accessed for intensive survey.

V. FINDINGS

In general, ground surface visibility across the west parcel varied from 0 to 75 percent, depending on vegetation cover and built environment (e.g., paved and graveled roads) across the parcel. More than two-thirds of the west parcel has been altered in some manner by activities supporting the adjacent quarry, such as access roads, the conveyor belt, and associated tunnel. The parcel also contains a power line corridor and has been subject to water drainage and vegetation management activities. In areas where the ground surface was not heavily altered or obscured, mineral soil visibility ranged from 0 to 25 percent. Visible soil color was a light reddish brown to deep reddish brown (approximately 7.5 YR 5/4-3/3 Munsell colors) with no dramatic soil color changes that would indicate prehistoric habitation or activities.

Quarry Supervisor, David Hayes, indicated that the quarry property (adjacent to the APE) was purchased in the early 1960s and that various quarry-related construction projects have occurred since that time. He also indicated that two springs were located near an explosives bunker, located on the main quarry access road in the west parcel. Although neither of these springs was located, several drainage channels with 2-ft. culvert pipes were observed. Additionally, several lengths of PVC and metal pipe were noted in the west parcel between the conveyor belt tunnel and the explosive bunker. Various items of contemporary trash, including a discarded camper shell, a metal folding chair, modern aluminum Budweiser beer cans, a five-gallon plastic bucket, a metal spring, a thick fragment of rusted metal, and a pile of 6 in. x 6 in., 3 ft.-long milled wood, were noted in the parcel. Most of this refuse was located within 25 ft. of gravel and dirt access roads. All of these items appeared to have been deposited within the past 20-30 years at the most and were not documented as cultural resources. Similar refuse was noted in the areas of the east parcel that were accessible, but these also appeared to date to the same time and were not recorded. No prehistoric cultural resources were found in either the west or east parcels which are consistent with the findings of previous studies (Jensen 2001, Sundahl 1982) conducted at least partially within the APE. However, a single historic-era feature (the previously-noted quarry conveyor system) was documented and evaluated for NRHP eligibility by JRP Historical Consulting (McMorris 2012).

VI. ASSESSMENT OF EFFECTS AND MANAGEMENT RECOMMENDATIONS

Per Forest Service Handbook 5409.13 (Land Acquisition Handbook) heritage resources identified within the APE were given the appropriate level of consideration as required by Executive Order 11593; the National Historic Preservation Act of 1966 (16 U.S.C. 470); and Title 36, Code of Federal Regulations, Part 800 (36 CFR part 800). No historic properties
(cultural resources presently listed or recommended eligible for listing on the NRHP) were documented within the APE. Consequently, the proposed land exchange would have no effect on historic properties. However, archaeological surveys are not necessarily capable of identifying prehistoric or historic-era properties that might be present in subsurface contexts. For lands transferred out of Federal management, cultural resources subsequently discovered on that property would no longer be subject to the provisions of Section 106, which requires mitigation for adverse effects on their integrity. If human remains and/or articles of patrimony were to be found on those lands following transfer to private ownership, they would be subject to California state law regarding their treatment and ultimate disposition. For lands transferred into Federal management, the treatment of cultural resources on the property would be subject to the provisions of Section 106, and any human remains and articles of patrimony would require treatment in accordance with the Native American Graves Protection and Repatriation Act.

The archaeological survey conducted by NSR did not record any cultural resources within the APE (JRP documented the quarry conveyor system) nor did it identify any particularly sensitive landforms such as saddles, drainages, or stream terraces. With few exceptions, the APE topography is rugged and characterized by steep slopes that generally contain low levels of sensitivity for exhibiting traces of historic-era and prehistoric activities. Prior to the construction of the Shasta Dam, the lands immediately adjacent to the Lower McCloud River were noted as having contained numerous important early Native American sites. However, these now-inundated landforms were located well to the north and did not extend into the APE. Given the low sensitivity of the APE landscape and the lack of identified resources, it is unlikely that any significant (per NRHP criteria) cultural resources are located within the parcels being transferred.
VII. REFERENCES


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July 11, 2012

Mim Roeder
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Sent by Fax: 530-345-4805
Number of Pages: 3

Re: Lehigh Southwest Land Exchange, Shasta County.

Dear Ms. Roeder:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III
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Shasta County
July 10, 2012

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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 6087.64 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Lehigh Southwest Land Exchange, Shasta County.
Native American Contacts
Shasta County
July 10, 2012

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