PROPONENT'S ENVIRONMENTAL ASSESSMENT

INDIAN SPRINGS TELECOM PROJECT
AUGUST 2009

Proceeding: _____

Docket Number: _____

Project Proponent:
Indian Springs Telecom, LLC
P.O. Box 34
Big Bend, CA 96011
530/337-6800

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Chapter 1: PEA Summary

The proposed project would include construction of cell towers, underground power transmission lines, and access roads at three sites (Bear Mountain, Hatchet Mountain, and Round Mountain) within Shasta County: Construction of the new facilities would be funded by a California Public Utilities Commission grant. The facilities would be owned by Indian Springs Telecom, LLC, for the duration of the grant period (which ends in July 2010, at which time ownership would be transferred to the Indian Springs Elementary School).

Project construction would include grading of new access roads and driveways, grading of the tower sites, construction of concrete slabs and/or footings to accommodate the towers, construction of telecommunications towers on the footings, installation of security fencing, and installation of new powerlines.

The project sites are located on private land and are surrounded by undeveloped areas with low vegetation or timberlands. Most of the project areas have been previously disturbed by the construction of roads and other communications facilities, while the Round Mountain powerline corridor was burned during the Fountain Fire in 1992 and subsequently replanted.

No alternatives are being considered in this document other than the "no project" alternative. Only the proposed sites were selected for impact assessment, due to the presence of existing roads, antennae fields, and/or other facilities. Other locations in the proposed service area would require preparation of new sites, which would result in added costs and added environmental impacts for project construction. Selection of the proposed sites also took into account the collaborative relationship between Indian Springs Telecom and the landowners of the proposed tower sites and powerline corridors, which also facilitates project implementation.

This Proponent's Environmental Assessment (PEA) evaluates potential environmental impacts that could result from the construction and operation of the project (see Section IV). As required by California Public Utilities Commission (CPUC) guidelines, the California Environmental Quality Act (CEQA) Initial Study Checklist is used as the format for describing potential impacts. Impacts resulting from the project would occur during the construction and operation of the proposed project.

Mitigation is provided to reduce the effects of the identified impacts to a less-than-significant level. These mitigation measures are as follows:

MITIGATION MEASURE III.1: Particulate matter emissions shall be controlled by implementing standard construction dust control measures, including but not limited to the following:

- Minimizing soil disturbance.
- Regularly watering disturbed areas, including on-site vehicle/equipment travel routes and soil stockpiles. Watering should be sufficient to prevent airborne dust from leaving the site.
- Curtailing earth-moving activities on windy days.
- Ensuring that the engines of all construction equipment are properly tuned.

- Limiting the maximum speed to 15 miles per hour on unpaved roads.
- Replanting vegetation in disturbed areas as quickly as possible.
- Implementing other effective particulate matter control measures, as needed.

MITIGATION MEASURE III.2: Greenhouse gas emissions generated during project construction shall be minimized by implementing the following:

- Using ARB-certified diesel construction equipment.
- Using alternative fuel types for construction equipment, such as biodiesel.
- Using local building materials.
- Limiting construction vehicle idling time.

MITIGATION MEASURE IV.1: Loss of northern clarkia at the Round Mountain site shall be minimized through implementation of the following measures:

- A qualified botanist shall flag and map the extent of northern clarkia populations in and adjacent to the study area; such work shall be conducted during the plant's blooming period (late June-July) and prior to initiation of construction.
- Under supervision of the qualified botanist, and in consultation with the construction project manager, temporary construction fencing shall be installed to protect the northern clarkia to the maximum extent feasible. The fencing shall be maintained throughout the duration of project construction.
- Stockpiling of materials and equipment shall not be allowed within the population boundary.
- Minor adjustments to the proposed powerline route shall be made to minimize disturbance of northern clarkia; where full avoidance is not feasible, the width of construction disturbance shall be minimized.

MITIGATION MEASURE IV.2: To ensure that active nests of raptors and migratory birds are not disturbed, vegetation removal shall be avoided during the nesting season (generally March 1 to July 31), to the extent possible. If vegetation removal must occur during the nesting season, a focused survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the project site. The survey shall be conducted no more than 30 days prior to the beginning of construction or tree removal. If nesting birds are found during the focused survey, the nest tree(s) shall not be removed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no construction shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the Department of Fish and Game (the size of the construction buffer zone may vary depending on the species of nesting birds present).

MITIGATION MEASURE IV.3: The loss of native oaks and conifers with a diameter at breast height (dbh) of five inches or greater shall be avoided to the extent feasible, as determined by a qualified botanist in consultation with the construction project manager. Measures may include minimizing the width of the construction corridor to avoid mature trees, installing temporary construction fencing to protect trees, limiting staging areas to lands that do not support mature trees, and other actions deemed appropriate during pre-construction field evaluation.

MITIGATION MEASURE V.1: If any cultural resources (i.e., human bone or burnt animal bone, midden soils, projectile points, humanly-modified lithics, historic artifacts, etc.) are encountered during any phase of construction, all earth-disturbing work shall stop within 100 feet of the find until a qualified archaeologist and/or the County Coroner can make an assessment of the discovery and recommend/implement mitigation measures as necessary. Treatment of any human remains shall be in accordance with California Health and Safety Code 7050.5 and Public Resources Code 5097.98.

Chapter 2: Project Purpose and Need and Objectives

Northeastern Shasta County currently contains 5,000 residents, of which 500 families are without telephone service. The purpose of this project is to provide cellular communications services to the unserved areas of northeastern Shasta County. Telephone service, including access to internet connections, is increasingly necessary in today's society, and important for safety, emergency services, and education, as well as general communication. Construction of the proposed project would help fulfill the unmet need for communication service in northeastern Shasta County.

Chapter 3: Project Description

3.1 Project Location

The proposed project would include construction of cell towers and supporting facilities at three sites (Bear Mountain, Hatchet Mountain, and Round Mountain) within Shasta County. (Figure 1: Vicinity Map; Figure 2: Project Location Map)

The Hatchet Mountain tower site (Figures 1a and 2a) is located off Bunchgrass Lookout Road about 6 miles from its intersection with Highway 299, approximately 10.5 miles southwest of Round Mountain, as shown on the Hatchet Mountain Pass USGS 7.5-minute quad (1990). The proposed cell tower site is within Shasta County APN 030-030-011. The Hatchet Mountain site contains an existing antennae field. The area around the antennae field is undeveloped, and consists primarily of timberlands. The site is privately owned.

The Round Mountain tower site (Figures 1b and 2b) is located near Backbone Road and Fenders Ferry Road, approximately one mile southeast of Round Mountain, as shown on the Montgomery Creek USGS 7.5-minute quad (1990). The project site is located on Shasta County APNs 029-610-007 (tower site, new access road, and a portion of the electrical line corridor) and -003 (electrical line corridor to the existing PG&E line). The Round Mountain site contains an existing antennae field. The area around the site is undeveloped, and consists primarily of timberlands. The site is privately owned. The proposed ±0.5-mile powerline serving the facility would traverse property owned by two entities (including the owner of the cell tower site). Preliminary arrangements have been made with the second property owner to allow a powerline right-of-way across their property. Additional information with regard to the right-of-way is included in Section 3.6: Right-of-Way Requirements.

The Bear Mountain tower site (Figures 1c and 2c) is located at the upper terminus of Bear Mountain Lookout Road, approximately 11.5 miles southwest of Round Mountain, as shown on the Project City USGS 7.5-minute quad (1969). The tower site is located within Shasta County APNs 304-020-003 (tower site and electrical line corridor, including a portion of the electrical line corridor within the access road right-of-way) and 304-180-018 (electrical line corridor within the access road right-of-way). The site currently contains a fire lookout operated by CalFire. The proposed ±3-mile underground powerline serving the facility, which would be located primarily in the Bear Mountain Lookout Road right-of-way, would traverse property owned by two entities (including the owner of the lookout site). Preliminary arrangements have been made with the second property owner to allow a powerline right-of-way across their property. Additional information with regard to right-of-way is included in Section 3.6: Right-of-Way Requirements.

3.2 Existing System

There is currently no system in place to provide telephone service to many residents of northeastern Shasta County. The project would connect to existing PG&E powerlines in three locations, as described in Section 3.4: Proposed Project.

3.3 Project Objectives

The objective of this project is to provide cellular communications services to unserved areas of northeastern Shasta County.

3.4 Proposed Project

The proposed project would include construction of cell towers, power transmission lines, and access roads at three sites (Bear Mountain, Hatchet Mountain, and Round Mountain) within Shasta County. Construction of the new facilities would be funded by a California Public Utilities Commission grant. All three sites are privately owned; Indian Springs Telecom LLC would lease the project sites for an initial period of 20 years, and own the facilities for the duration of the grant period (which ends in July 2010), at which time ownership would be transferred to the Indian Springs Elementary School. Ownership of the facilities by the Indian Springs Elementary School would be in accordance with Assembly Bill 140, which requires that projects have a designated fiscal agent.

Each proposed tower may support several users. At this time, Indian Springs Telecom LLC has received letters of intent from T-Mobile for all three sites (Appendix A).

The Hatchet Mountain tower site (Figures 1a and 2a) would consist of a 50- by 50-foot fenced area (6-foot-tall, chain link with barbed wire) with a four-legged steel tower on individual concrete footings (±8' x 8') within the fenced area. The tower would be approximately 150 feet tall, and would be located within an existing antennae field. The project would also include improvement to an existing driveway to access the new tower. In addition, construction at the Hatchet Mountain site would include an overhead powerline (±90 feet) from an existing PG&E powerpole to the proposed tower site. The site is zoned as "TP (Timber Production)" and is designated by the Shasta County General Plan as "Timberland."

The Round Mountain tower site (Figures1b and 2b) would consist of a 50- by 50-foot fenced area (6-foot-tall, chain link with barbed wire), with a ±32- by 32-foot concrete pad (or ±8' x 8' individual concrete footings) for the four-legged steel tower. The tower would be approximately 150 feet tall, and would be within an existing antennae field. In addition, construction would include a new ±20-foot-wide native soil access road from the existing access road, around the western slope of Round Mountain, connecting to the existing site (±1,250 feet long). A new ±0.5-mile-long underground powerline would be constructed between the tower site and to an existing PG&E line (600 Kv) located north of Round Mountain Road. The powerline would be installed in a ±20-foot-wide corridor parallel to an existing AT&T powerline. The corridor was previously disturbed, during the installation of the AT&T powerline. The site is zoned as "TP (Timber Production)" and "TL (Timberland)" and is designated by the Shasta County General Plan as "Timberland."

The Bear Mountain tower site (Figures 1c and 2c) would consist of a 100- by 100-foot fenced area (6-foot tall, chain link with barbed wire), with a four-legged steel tower on individual concrete footings (±8' x 8') within the fenced area. The tower would be approximately 150 feet tall. The site is adjacent to a fire lookout operated by CalFire. In

addition, construction at this site would include a new ±3-mile-long underground powerline between the tower site and an existing PG&E transmission line corridor located northwest of Bear Mountain Road. The upper ±¼-mile section would be constructed cross-country, while the lower ±2.75 miles of line would be installed within the Bear Mountain Lookout Road right-of-way. The site is zoned as "EA-AP" (Exclusive Agricultural) and "R-L" (Limited Residential), and is designated by the Shasta County General Plan as "Rural Residential B."

Future Work
Indian Springs Telecom LLC hopes to construct two additional telecommunication towers at some point in the future; potential locations of these towers are currently unknown.

Permits and Approvals
- Shasta County Grading Permit
- Shasta County special use permit for construction within an EA-AP zone
- CPUC CEQA approval
- CPUC approval of the Mitigation Monitoring Reporting Program
- California Regional Water Quality Control Board Construction Activity Storm Water Permit
- Forest Practice Act compliance

3.5 Project Components

Descriptions of applicable project components are included in Section 3.4: Proposed Project.

3.6 Right-of-Way Requirements

New rights-of-way would be required at Round Mountain and Bear Mountain.

At Round Mountain, new rights of way would be needed for the proposed ±¼-mile access road and the ±½-mile powerline. Sierra Pacific Industries owns the parcel that includes the Round Mountain tower site, access road corridor, and approximately 2,360 feet of the new powerline corridor. The remaining ±430 feet of new powerline corridor would be located on property owned by Rockney Compton. Preliminary arrangements have been made with the property owners to allow for facilities construction and/or rights-of-way on their properties.

At Bear Mountain, the majority of construction, including the proposed tower and ±2.5 miles of powerline would be located on land owned by Elaine Vrismo. The remainder of the powerline corridor is also owned by Lammers Properties, LLC. Preliminary arrangements have been made with the property owners to allow for facilities construction and/or powerline right-of-way on their properties.

3.7 Construction

3.7.1. Staging Areas

Staging would generally be limited to land within the proposed 50- by 50-foot or 100- by 100-foot cell tower sites. If necessary, additional equipment or materials storage could occur in nearby roaded or previously disturbed areas; no vegetation removal or earthwork would be associated with staging/ storage that may occur outside the fenced tower sites. Temporary security fencing would not be needed for the Bear Mountain or Round Mountain sites as both are behind locked gates. If needed at the Hatchet Ridge site, the proposed permanent fence would be constructed at the outset of work, which would provide for security of the staging area during construction.

3.7.2 Work Areas

Cell tower construction work areas would generally be limited to the 50- by 50-foot or 100- by 100-foot fenced sites. Road and powerline construction areas would be confined within the proposed 20-foot-wide rights-of-way. Work areas would be accessed by construction vehicles via existing unpaved access roads. Site preparation would include removal of vegetation from the cell tower sites and construction rights-of-way. The vegetation would be lopped and reapplied to the ground surface to provide erosion control. Minor earthwork would be conducted at the cell tower sites to provide level pads for tower footing construction. All disturbed areas would be seeded with an erosion control mix following completion of construction.

3.7.3 Access Roads and/or Spur Roads

Existing dirt roads provide access to all three tower sites. Short (less than 100 feet), at-grade dirt access roads would be extended to the Hatchet Ridge and Bear Mountain tower sites. The upper ±600 feet of existing access road to the Round Mountain site is excessively steep and exceeds a 30 percent slope. Because the road is too steep to allow vehicle access during adverse weather conditions, this segment of road would be replaced with a new road. The new alignment would be approximately 1,250 feet in length and would have a maximum slope of 15 percent. The road may be graveled to provide better traction, and would be outsloped to minimize concentration of runoff and the potential for water erosion. Rolling dips would be installed at 50- to 75-foot intervals to provide further erosion control.

3.7.4 Helicopter Access

N.A.

3.7.5 Vegetation Clearance

Hatchet Mountain: Existing vegetation consists primarily of a dry meadow, with only an occasional shrub or tree. Very little, if any, woody vegetation would need to be removed to facilitate project construction.

Round Mountain: Existing vegetation consists of a mixed conifer forest in the vicinity of the tower site. Less than 5,000 square feet would be cleared, with fewer than 10 trees (less than 24 inches in diameter) being removed. The powerline would also be constructed through a mixed conifer forest; the clearance area would be ±52,800 square feet in size; an

estimated 50 trees (less than 24 inches in diameter) would be removed. Road construction would result in the removal of mature mixed conifer-oak forest, with a clearance area of ±36,000 square feet.

Bear Mountain: Existing vegetation consists of a mixed conifer-oak forest in the vicinity of the tower site. Less than 12,000 square feet would be cleared. Approximately two dozen trees up to 24 inches in diameter would be removed. The powerline corridor supports primarily a young ponderosa pine forest, although mature trees are present in places. The clearance area for the powerline corridor outside of the road right-of-way would be ±27,760 square feet.

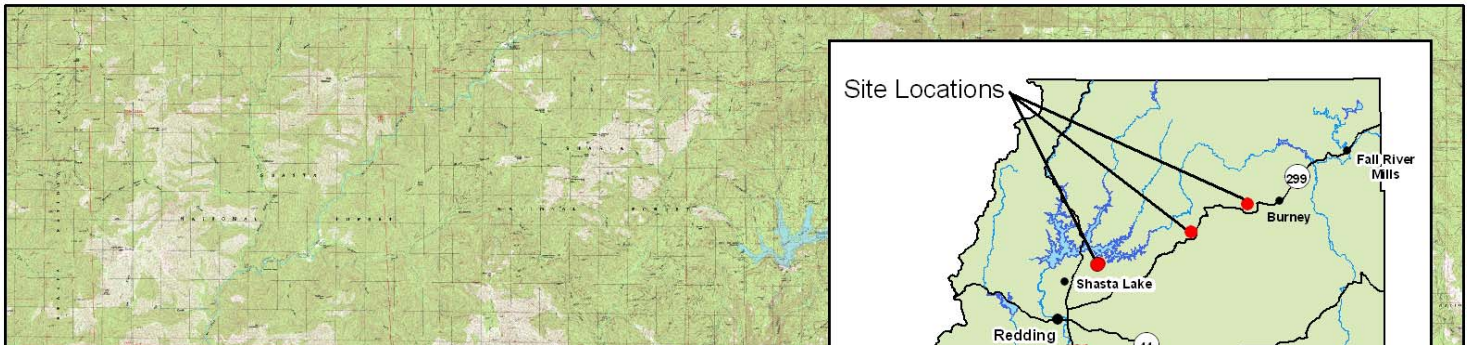
3.7.6 Erosion and Sediment Control and Pollution Prevention during Construction
Existing state law requires that a General Construction Activity Storm Water Permit be obtained in advance for all projects involving ground disturbance of one acre or more. As a condition of the permit, a Storm Water Pollution Prevention Plan (SWPPP) must be prepared. The proposed construction work at Round Mountain and Bear Mountain would be subject to a General Construction Activity Storm Water Permit and SWPPP.

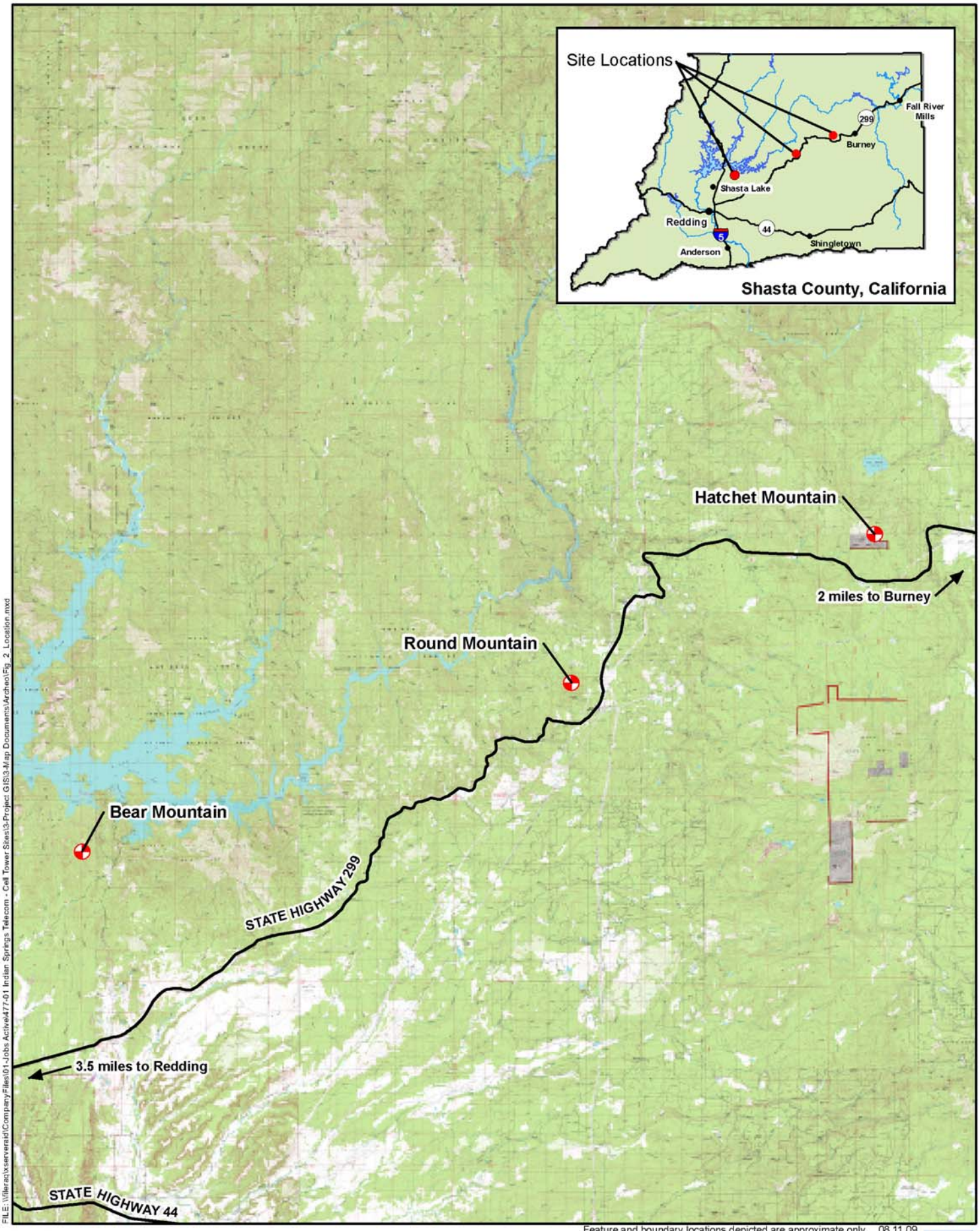
In addition to the concrete pad for the proposed tower, soil disturbance at Round Mountain would consist of ±800 cubic yards for the powerline (slopes ranging from 25-65%), and ±50,000 cubic yards for the road construction (slopes of ±30%). In addition to the concrete pad for the Bear Mountain tower, soil disturbance at Bear Mountain would consist of ±4,800 cubic yards for the powerline (slopes ranging up to 65%). Types of measures likely to be included in the SWPPP would call for returning the powerline rights-of-way to pre-existing contours following completion of construction, seeding disturbed soils with an erosion control mix, installing wattles or silt fencing, and incorporating permanent measures for erosion control into the proposed Round Mountain road (such as outsloping and rolling dips). Spill prevention would also be addressed in the SWPPP, but should be a minor issue. All construction wastes would be discarded offsite at an approved disposal facility.

3.7.7 Cleanup and Post-Construction Restoration
As noted above, woody debris would be lopped and spread on the ground surface for erosion control, and disturbed soils would be seeded for erosion control. No wetlands or natural drainages would be affected by construction at any of the three sites.

3.7.8 Construction Schedule
Construction is expected to take place between April and July 2010 (depending on issuance of permits and approvals), with construction being performed simultaneously at all three sites, for a duration of two months.

3.8 Operation and Maintenance





Feature and boundary locations depicted are approximate only. 08.11.09

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Figure 2

Project Location Map

ENPLAN

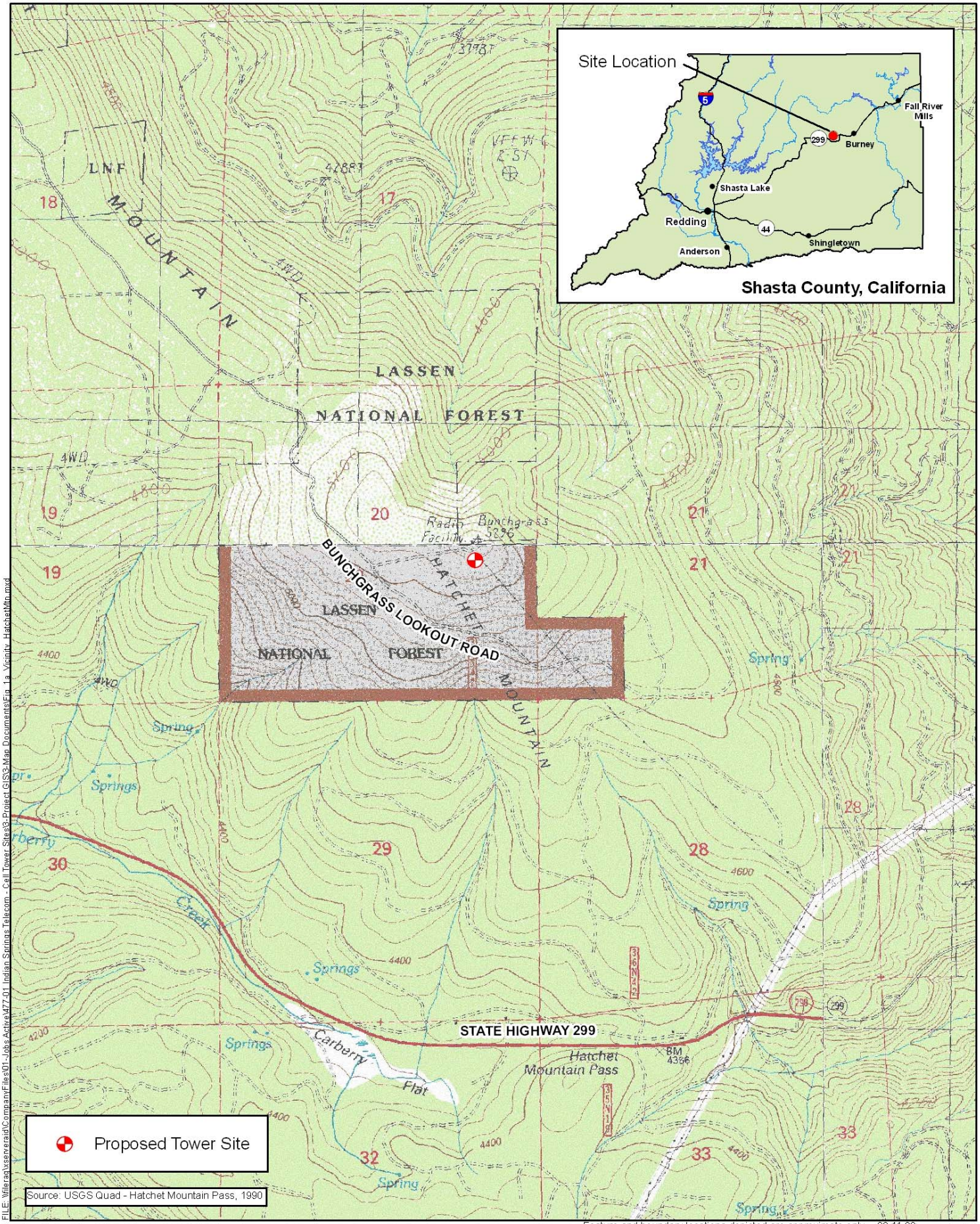

Figure 1a

Vicinity Map - Hatchet Mountain

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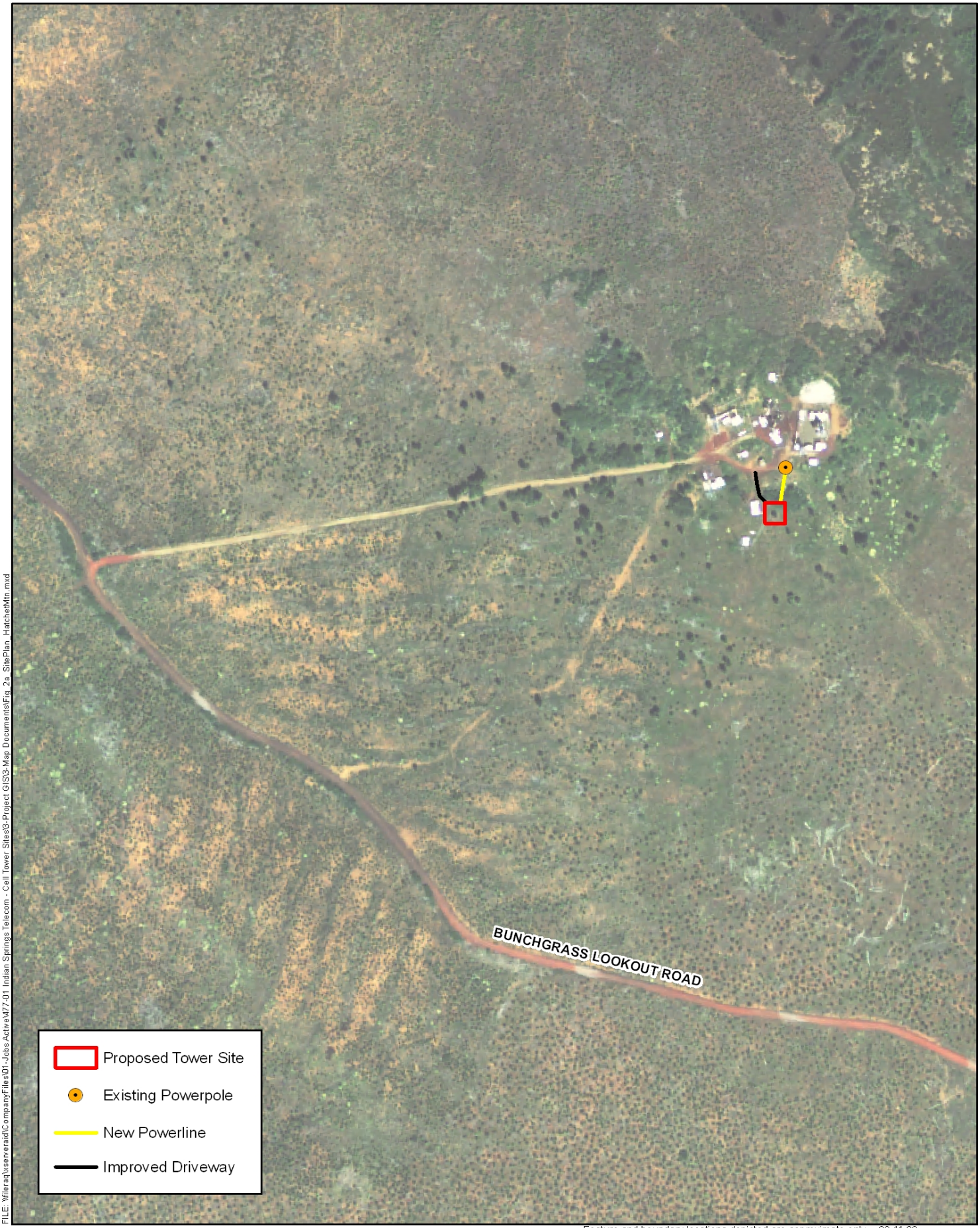

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Feature and boundary locations depicted are approximate only. 08.11.09

0 300 Feet

Figure 2a

Site Plan - Hatchet Mountain

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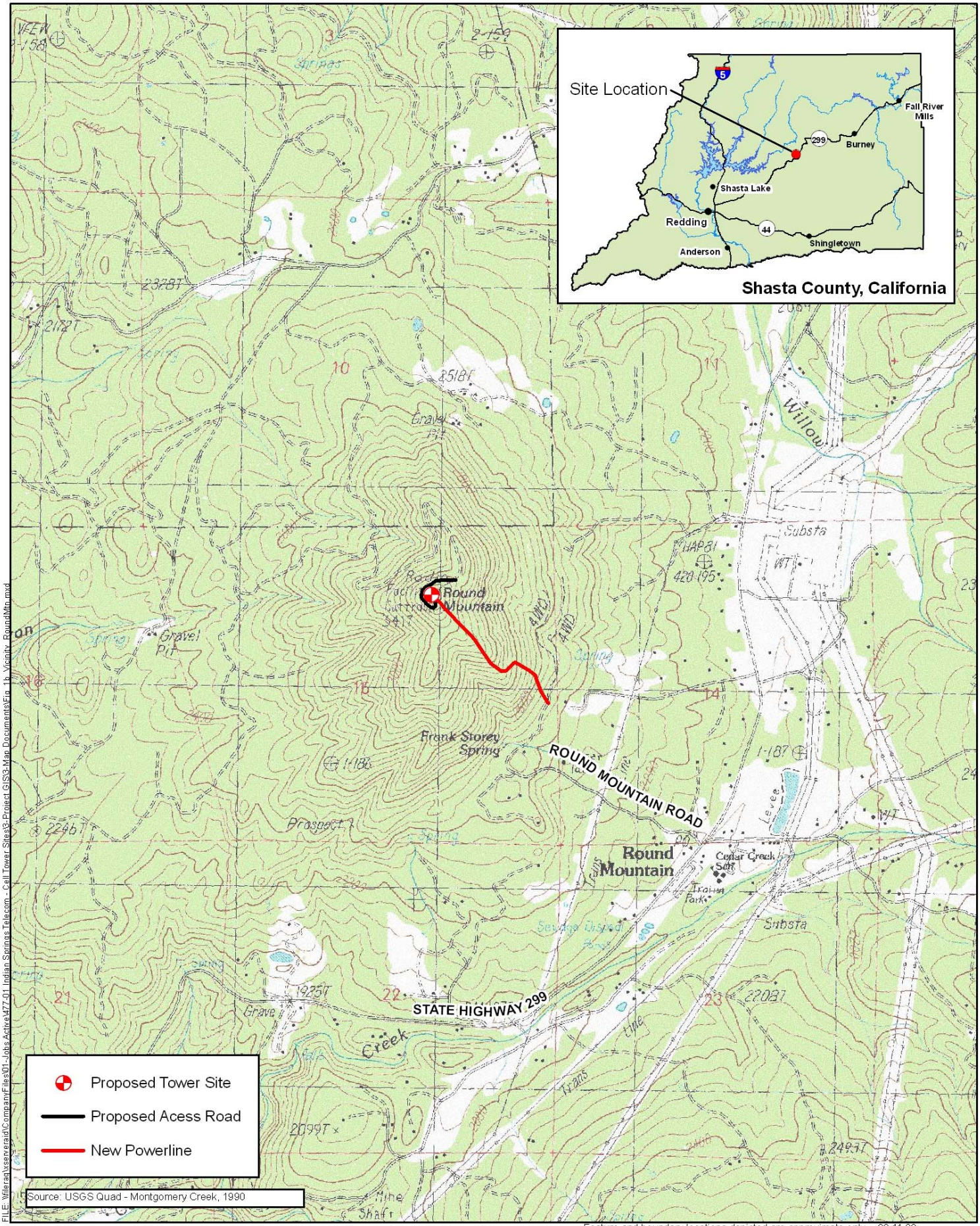

Figure 1b

Vicinity Map - Round Mountain

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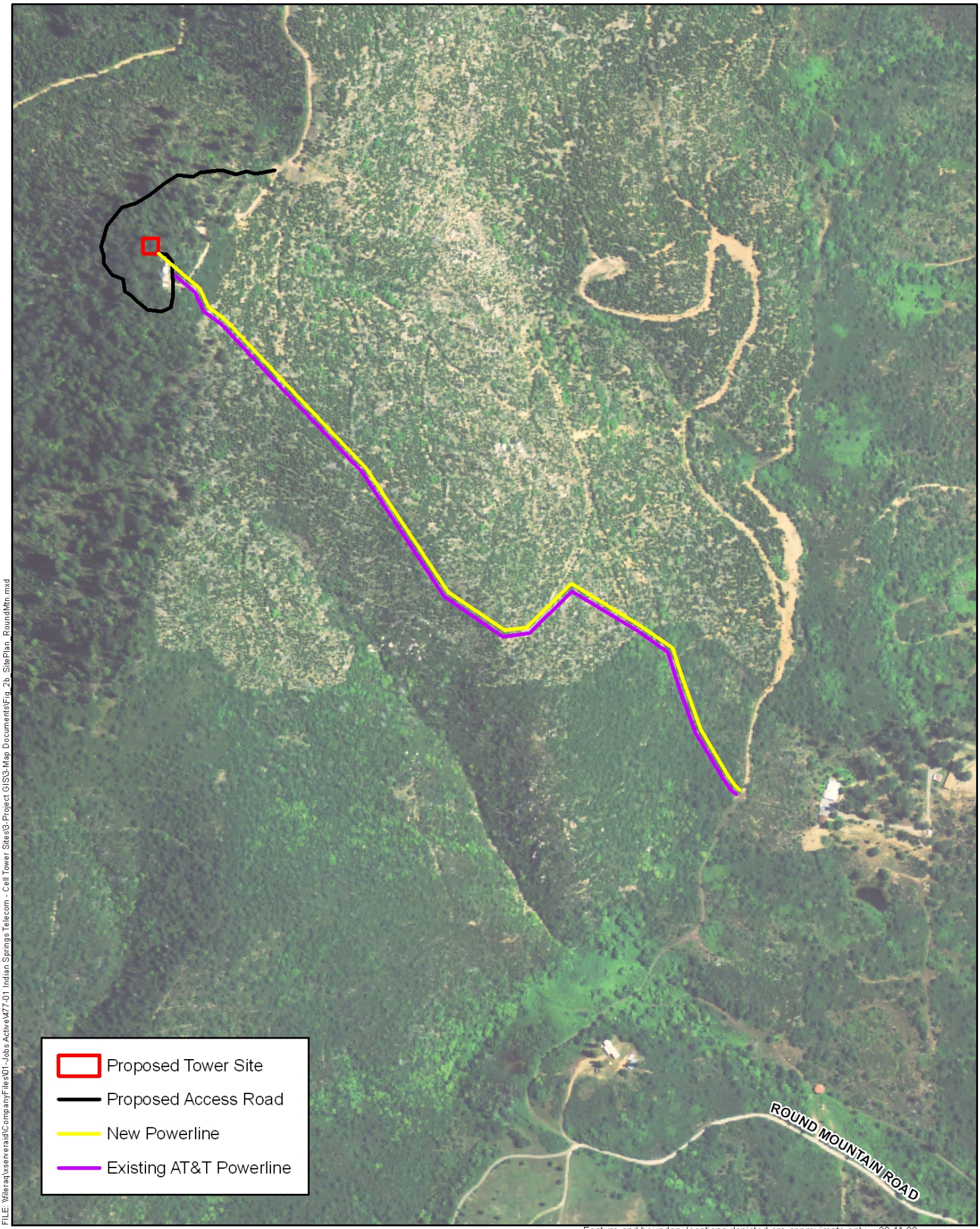

Figure 2b

Site Plan - Round Mountain

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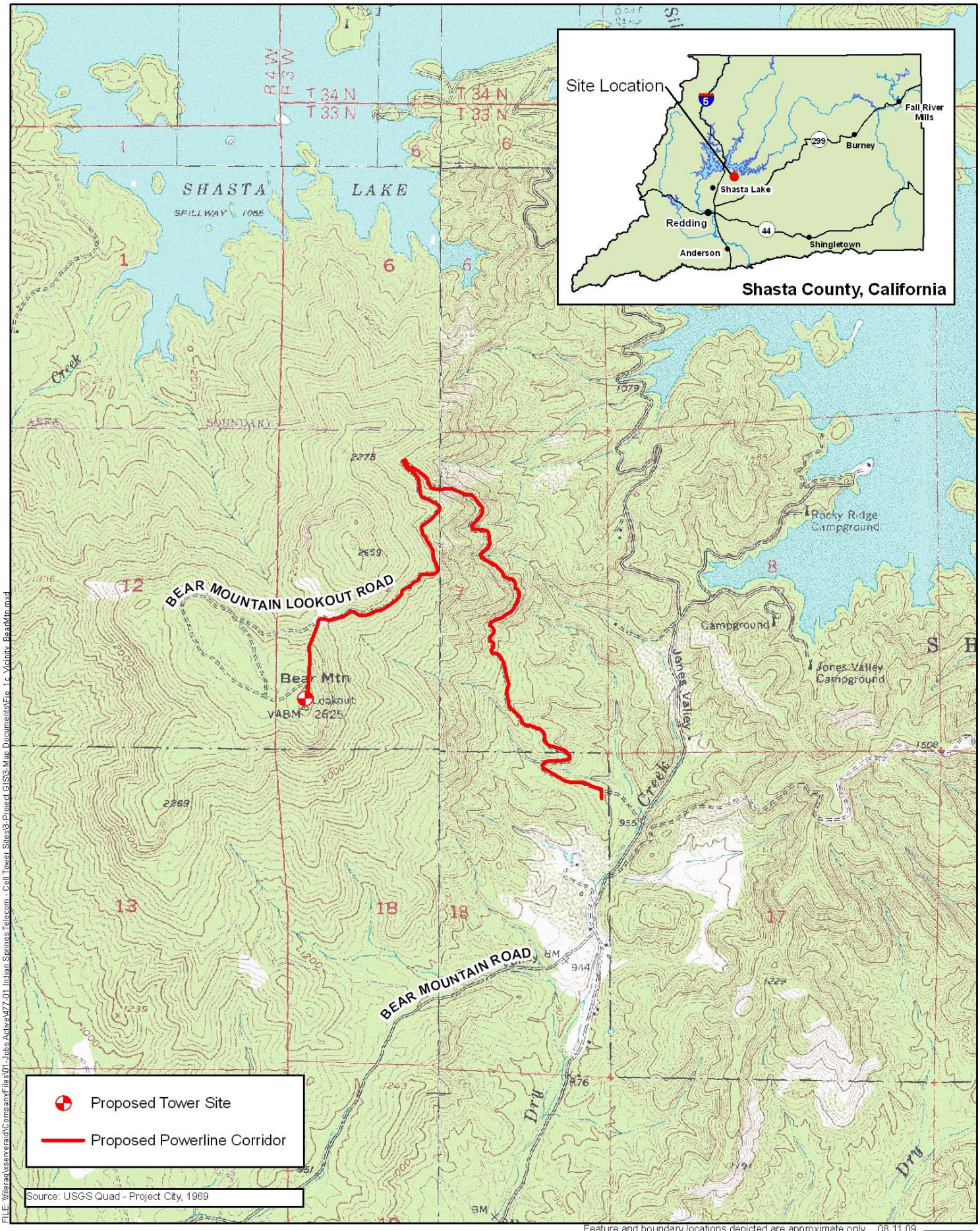

Figure 1c

Vicinity Map - Bear Mountain

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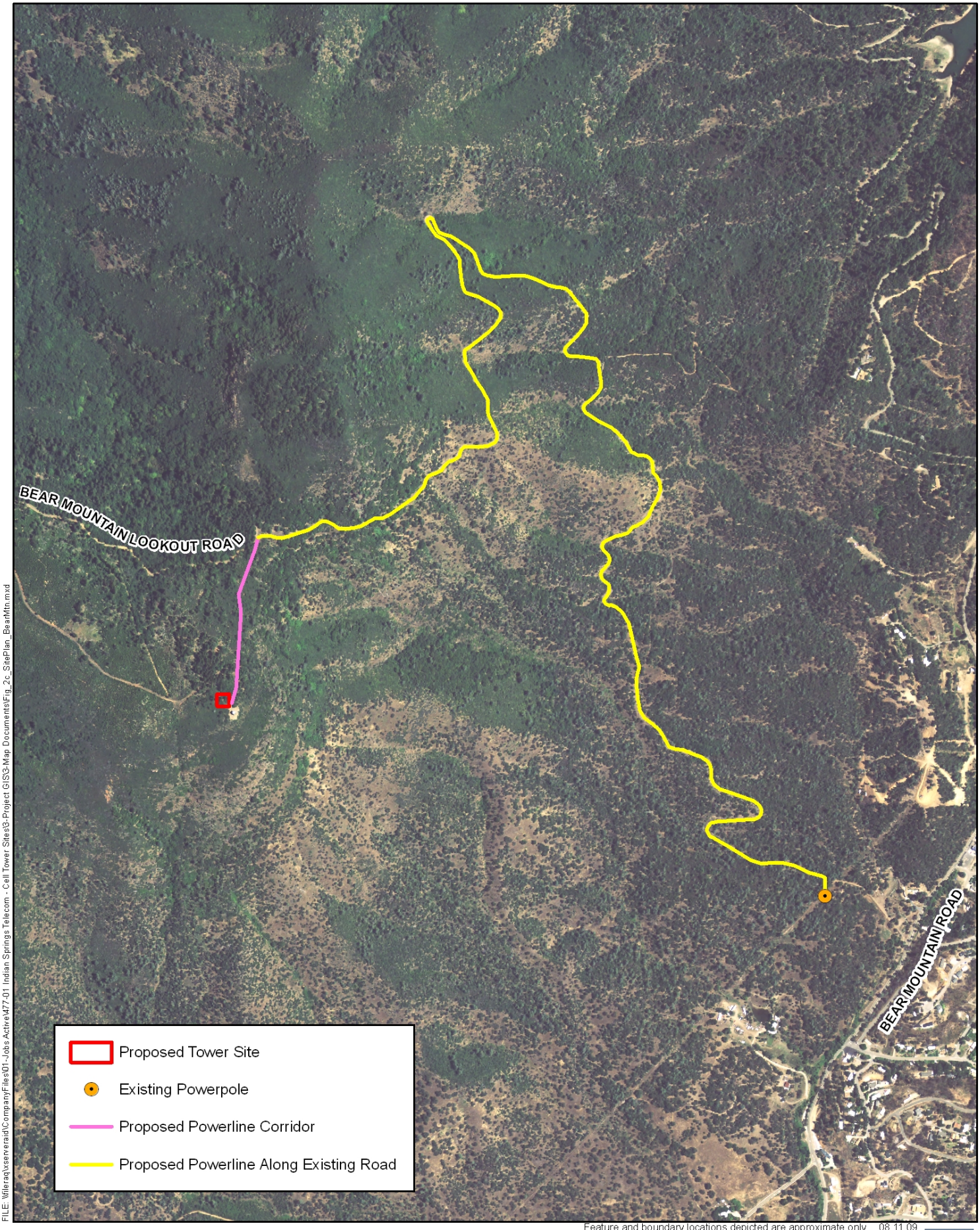

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Feature and boundary locations depicted are approximate only. 08.11.09

0 1,000 Feet

Figure 2c

Site Plan - Bear Mountain

ENPLAN

Chapter 4: Environmental Setting

As suggested by the CPUC in the *WORKING DRAFT Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects*, the discussion of Environmental Setting has been combined with each resource area in the Environmental Assessment Summary.

Chapter 5: Environmental Impact Assessment Summary

Introduction

As required by CPUC Rule 17.1 and General Order 131-D, the CEQA Initial Study checklist was used to focus the impact analysis for the proposed project. In conformance with CEQA, the Proponent's Environmental Assessment (PEA) provides information to the CPUC regarding the potential environmental consequences of the project. The methodologies used for determining standards of significance of all impact categories analyzed in the PEA derive from Appendix G of the revised CEQA Guidelines and are described for each environmental topic below.

- Land Use and Planning
- Population and Housing
- Hydrology and Water Quality
- Air Quality
- Transportation/Circulation
- Biological Resources
- Mineral Resources
- Hazards and Hazardous Materials
- Geology and Soils
- Utilities & Service Systems
- Aesthetics
- Cultural Resources
- Agricultural Resources
- Noise
- Recreation
- Public Services

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- **No Impact.** The development will not have any measurable environmental impact on the environment.

- **Less-Than-Significant Impact.** The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- **Potentially Significant Impact Unless Mitigation Incorporated.** The development will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- **Potentially Significant Impact**. The development will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less-than-significant levels.

Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the proposal:				
a. Have a substantial adverse effect on a scenic vista?	❑	❑	X	❑
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❑	❑	❑	X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	❑	❑	X	❑
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❑	❑	❑	X

Environmental Setting

The project sites are located in northeastern Shasta County, and the area surrounding the project sites is relatively undeveloped. The project sites are visible from the general vicinity. Although the project sites are located on mountaintops and in undeveloped areas, no designated scenic vistas are located at or near the sites, nor are the project sites located near State Scenic Highways.

As the visual character of the project sites is not expected to change, considering the current presence of structures and antennae fields, visual simulations are not considered to be necessary. For reference purposes, current photographs of each site have been included in this section.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to aesthetic impacts.

State

California Scenic Highway Program

The California Scenic Highway Program is administered by the California Department of Transportation (Caltrans). The goal of the program is to preserve and protect scenic highway corridors from change that would affect the aesthetic value of the land adjacent to highways. The program is not applicable to the subject site, as no scenic highways have been designated in the vicinity.

Local

Shasta County General Plan

There are no applicable *Shasta County General Plan* policies and/or objectives for a project of this nature.

Discussion

a, c. Although the project sites are located on mountaintops and in undeveloped areas, no designated scenic vistas are located at or near the sites. At Hatchet Mountain and Round Mountain, the project would add an additional tower to existing antennae fields. At Bear Mountain, the project would add a tower near an existing fire lookout. The tower is not expected to visually compromise views from the fire lookout. Powerline and road corridor construction would result in vegetation removal. Following construction, the powerline corridor and road cuts and fills would be reseeded following completion of construction. As viewed from public lands and public roadways, the visual quality of the project sites would be relatively unchanged. There would be a less-than-significant impact.

b. The project corridor is not located adjacent to a state-designated scenic highway. There would be no impact.

d. Project implementation would not create a new source of lighting. There would be no impact.

Documentation
Shasta County General Plan, Section 6.8 Scenic Highways, and Section 7.6 Design Review

Zoning Standards per Shasta County Code, Title 17

California Department of Transportation (Caltrans). Accessed 2009. *California Scenic Highways.* Website: <www.dot.ca.gov/hq/LandArch/scenic_highways/>.

Mitigation
None necessary.

Hatchet Mountain

Proposed Tower Site

Existing Facilities

Existing Facilities—Distance View

Proposed Tower Site

Existing Facilities

Existing Facilities—Distance View

Bear Mountain

Proposed Tower Site

Existing Facilities

Existing Facilities—Distance View

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURAL RESOURCES. Would the proposal:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❑	❑	❑	X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❑	❑	X	❑
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	❑	❑	❑	X

Environmental Setting

There are no designated Prime Farmlands or Prime Farmland soils within or near the project sites. The Bear Mountain site is zoned as "EA-AP Exclusive Agricultural – Agricultural Preserve" (tower site and electrical line corridor, including a portion of the electrical line corridor within the access road right-of-way), and is within a parcel that is a current Williamson Act contract. Construction of a telecommunication tower on the site will require Shasta County discretionary approval in the form of a special use permit.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to agricultural impacts.

State

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program

The California Department of Conservation, Division of Land Resource Protection, manages the Farmland Mapping and Monitoring Program. This program includes a list of "Important Farmland Categories" based on soil characteristics that have significant agricultural production values. The "Important Farmland Categories" are defined below:

- *Prime Farmland:* Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustainable yields.
- *Farmland of Statewide Importance:* Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Farmland of Local Importance:* Land of importance to the local agricultural economy as determined by each county's Board of Supervisors and a local advisory committee. Farmland of Local Importance in Shasta County includes "Dryland grain producing lands. Also included are farmlands that are presently irrigated but do not meet the soil characteristics of Prime or Statewide Farmland. These soils include Newtown gravelly loam (8 to 15 percent slopes); Moda loam, seeped (0 to 3 percent slopes); Moda loam, shallow (0 to 5 percent slopes); and Hillgate loam." (California Department of Conservation, 2006)
- *Grazing Land:* Land on which the existing vegetation is suited to the grazing of livestock.
- *Urban and Built-up Land*: Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial,

commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- *Other Land:* Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres.

Local

Shasta County General Plan

The following *Shasta County General Plan* objective is applicable to the proposed project:

AG-5 Protection of agricultural lands from development pressures and or uses which will adversely impact or hinder existing or future agricultural operations.

Discussion

a, b, c. The project area does not include land that is designated as Farmland (Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) (California Department of Conservation, Division of Land Resource Protection, 2004). The Bear Mountain site is zoned as "EA-AP Exclusive Agricultural – Agricultural Preserve" (tower site and electrical line corridor, including a portion of the electrical line corridor within the access road right-of-way), and is within a parcel that is a current Williamson Act contract. Construction of a telecommunication tower on the site will require Shasta County discretionary approval in the form of a special use permit. Following compliance with the Shasta County approval process, there would be no impact.

Documentation

Shasta County General Plan, Section 6.1 Agricultural Lands.

Soil Survey of Shasta County Area, California, published by U.S. Department of Agriculture, Soil Conservation Service and Forest Service, August 1974.

California Department of Conservation. 2004. Accessed 2009. Website: <www.consrv.ca.gov/dlrp/fmmp/Pages/Index.aspx>.

_____. 2006. Accessed 2009. *Historic Land Use Conversion 1984-Present.* Website: <http://www.consrv.ca.gov/dlrp/FMMP/county_info_results.asp>.

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Would the proposal				
a. Conflict with or obstruct implementation of the applicable air quality plan?	❑	❑	X	❑
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	❑	X	❑	❑
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	❑	X	❑	❑
d. Expose sensitive receptors to substantial pollutant concentrations?	❑	❑	❑	X
e. Create objectionable odors affecting a substantial number of people?	❑	❑	❑	X

Environmental Setting

Shasta County is located at the northern end of the Sacramento Valley Air Basin (SVAB). The SVAB consists of all or part of eleven counties. The SVAB is bounded on the north and west by the Coast Range, and on the east by the southern end of the Cascade Range and the northern end of the Sierra Nevada. These mountain ranges represent a substantial physical barrier to locally created pollution, as well as that transported northward on prevailing winds from the Sacramento metropolitan area.

The climate of the Sacramento Valley Air Basin is dominated by the strength and location of a semi-permanent, subtropical, high-pressure cell over the northeastern Pacific Ocean, with terrain variations creating various microclimates. The existence of mountains and hills within the basin is responsible, in large part, for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Airflow patterns in the basin are predominantly northwesterly in the spring and summer; however, seasonal variations do occur. Calm conditions dominate the winter months. Regional airflow patterns affect air quality by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, as well as topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal.

Precipitation is highly variable seasonally. Summer months are often dry, averaging less than one inch in total precipitation per month. Rainfall is most abundant during the winter months and increases with elevation. Annual rainfall is lowest in the valleys, higher in the foothills, and highest in the mountains.

Background Air Quality

Pollutants of concern include both criteria pollutants and toxic air contaminants. Criteria pollutants (Table III.1) are those regulated by federal and State laws since the 1970s pursuant to the federal and State Clean Air Acts: e.g., ozone, carbon monoxide, suspended particulate matter, oxides of nitrogen, and sulfur dioxide. Toxic air contaminants are identified by State regulation: e.g., particulate matter from diesel-fueled engines, asbestos, chlorinated organic compounds, metals, radon and iodine gas, and other contaminants.

Criteria Pollutants

To date, the national ambient air quality standards (NAAQS) have been established for seven criteria pollutants, as follows: sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sub

10-micron particulate matter (PM_{10}), sub 2.5-micron particulate matter ($PM_{2.5}$), and lead (Pb). The criteria pollutants are those that have been demonstrated historically to be widespread and have a potential for adverse health impacts. The State of California has also established ambient air quality standards (CAAQS) that further limit the allowable concentrations of certain criteria pollutants.

Each federal or state ambient air quality standard is comprised of two basic elements: (1) a numerical limit expressed as an allowable concentration, and (2) an averaging time that specifies the period over which the concentration value is to be measured. Table III.2 presents the current federal and state ambient air quality standards.

Regulatory Setting

Federal

Environmental Protection Agency

At the federal level, the U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. The U.S. EPA air quality mandates are derived from the federal Clean Air Act (CAA), which was signed into law in 1970. Congress amended the CAA in 1977 and again in 1990. The CAA required the EPA to establish the national ambient air quality standards (NAAQS), and to also establish deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility limitations.

The CAA Amendments of 1990 made major changes in deadlines for attaining NAAQS and in the actions required of areas of the nation that exceed these standards. Under the CAA, state and local agencies in areas that exceed the NAAQS are required to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by EPA. States may also establish their own standards, provided that state standards are at least as stringent as the NAAQS. California has established California ambient air quality standards (CAAQS) pursuant to California Health and Safety Code.

The CAA required states to develop an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that California uses to attain the NAAQS. The EPA approved the California SIP in September 1996. The SIP became effective on February 7, 1997. Pursuant to the SIP, the State of California will strive for compliance with federal ozone standards by the year 2010. This will be accomplished using a combination of performance standards and market-based programs that will speed the introduction of cleaner technology and expand compliance flexibility.

State

California Air Resources Board

The California Air Resources Board (CARB) is the agency responsible for coordination and oversight of state and local air pollution control programs and for implementing the California Clean Air Act (CCAA) of 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS by the earliest practical date. The CCAA mandates that districts focus particular attention on reducing emissions from transportation and area-wide emission sources, and the Act provides districts with the authority to regulate indirect sources. Each district is to achieve a five percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. Air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that includes measures for attaining the CCAA mandates.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24)

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 24 CCR Part 6 in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. CPUC adopted new standards in January 2008, and will be implemented in August 2009.

Table III.1: Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen). Often called photochemical smog.	• Eye irritation • Respiratory function impairment.	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream. • Aggravation of cardiovascular disease. • Fatigue, headache, confusion, dizziness. • Can be fatal in the case of very high concentrations.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	• Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	• Aggravation of chronic obstruction lung disease. • Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time.	• Aggravation of heart/lung chronic disease and disease symptoms.	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

Table III.2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards Concentration	National Standards Concentration
Ozone	1 hour	0.09 ppm (180 µg/m^3)	-
	8 hour	0.07 ppm (137 µg/m^3)	0.08 ppm (157 µg/m^3) (3-year average of annual 4th-highest daily maximum)
Carbon monoxide	8 hour	9.0 ppm (10000 ug/m^3)	9 ppm (10000 ug/m^3)
	1 hour	20 ppm (23000 ug/m^3)	35 ppm (40000 ug/m^3)
Nitrogen dioxide	Annual Average	-	0.053 ppm (100 µg/m^3)
	1 hour	0.25 ppm (470 µg/m^3)	-
Sulfur dioxide	Annual Average	-	0.03 ppm (80 µg/m^3)
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	3 hour	-	0.5 ppm (1300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	-
Respirable particulate matter (10 micron)	24 hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	50 µg/m^3
Fine particulate matter (2.5 micron)	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3 (3-year average)
	24 hour	-	65 µg/m^3 (3-year average of 98th percentiles)
Sulfates	24 hour	25 µg/m^3	-
Lead	30 day	1.5 µg/m^3	-
	Calendar Quarter	-	1.5 µg/m^3

Source: California Air Resources Board, Ambient Air Quality Standards (2/22/07) <http://www.arb.ca.gov/research /aaqs/aaqs2.pdf>
ppm = parts per million
µg/m^3 = micrograms per cubic meter

Assembly Bill 32

The Legislature enacted AB 32 (AB 32, Nunez), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006 to further the goals of Executive Order S-3- 05. AB 32 represents the first enforceable statewide program to limit greenhouse gas emissions from all major industries, with penalties for noncompliance. CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide greenhouse gas emissions. This program will be used to monitor and enforce compliance with the established standards. The first greenhouse gas emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020 (the California Air Resources Board has approved a 2020 emissions limit of 427 metric tons of CO2 equivalents). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost effective greenhouse gas emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring, compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee.

Executive Order S-20-04

Governor Schwarzenegger signed Executive Order S-20-04 (The California Green Building Initiative) establishing the State's priority for energy and resource-efficient high performance buildings on December 14, 2004. The Executive Order sets a goal of reducing energy use in state-owned and private commercial

buildings by 20 percent in 2015 using non-residential Title 20 and 24 standards adopted in 2003 as the baseline. The California Green Building Initiative also encourages private commercial buildings to be retrofitted, constructed, and operated in compliance with the State's Green Building Action Plan.

Executive Order S-3-05
In June 2005, Governor Schwarzenegger established California's greenhouse gas emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: Greenhouse gas emissions should be reduced to 2000 levels by 2010; greenhouse gas emissions should be reduced to 1990 levels by 2020; and greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of the California Environmental Protection Agency (the Secretary) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agencies involved in the greenhouse gas reduction plan include the Business, Transportation and Housing Agency, Department of Food and Agriculture, Resources Agency, California Air Resources Board, Energy Commission, and the Public Utilities Commission. The Secretary is required to submit a biannual progress report to the Governor and State Legislature disclosing the progress made toward greenhouse gas emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global climate change on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to combat these impacts.

Executive Order S-I-07
On January 18, 2007, California further solidified its dedication to reducing greenhouse gases by setting a new Low-Carbon Fuel Standard for transportation fuels sold within the State. Executive Order S-I-07 sets a declining standard for greenhouse gas emissions measured in carbon dioxide-equivalent gram per unit of fuel energy sold in California. The target of the Low-Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The Low-Carbon Fuel Standard applies to refiners, blenders, producers and importers of transportation fuels and will use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods. The Executive Order requires the Secretary of the California Environmental Protection Agency to coordinate with actions of the California Energy Commission, CARB, the University of California, and other agencies to develop a protocol to measure the "life cycle carbon intensity" of transportation fuels. In response to this Executive Order, CARB identified the Low-Carbon Fuel Standard as an early action item with a regulation to be adopted and implemented by 2010.

Senate Bill 97
Senate Bill 97 of 2007 requires the California Office of Planning and Research (OPR) to develop CEQA guidelines, and identify the effects of greenhouse gas emissions and mitigation measures to the Resources Agency by July 1, 2009. These guidelines for analysis and mitigation must address, but are not limited to, the effects of greenhouse gas emissions associated with transportation and energy consumption. Following receipt of these guidelines, the Resources Agency must certify and adopt the guidelines prepared by OPR by January 1, 2010. In his signing statement, Governor Arnold Schwarzenegger noted:

"Current uncertainty as to what type of analysis of greenhouse gas emissions is required under the California Environmental Quality Act (CEQA) has led to legal claims being asserted which would stop these important infrastructure projects. Litigation under CEQA is not the best approach to reduce greenhouse gas emissions and maintain a sound and vibrant economy. To achieve these goals, we need a coordinated policy, not a piecemeal approach dictated by litigation. "

The OPR has begun the process of formulating the guidelines called for in Senate Bill 97. Part of that effort included a survey of existing climate change analyses performed by various lead agencies under CEQA. OPR's effort revealed many questions surrounding such analyses, including ”What is a "new" greenhouse gas emission?”, “What is the appropriate baseline for a climate change analysis?”, and ”When would emissions become significant under CEQA?”.

Senate Bill 375
Senate Bill 375 (SB 375) would require metropolitan planning organizations to include sustainable communities' strategies in their regional transportation plans. The purpose of SB 375 is to reduce greenhouse

gas emission from automobiles and light trucks, require CARB to provide greenhouse gas emission reduction targets for the automobile and light truck sector for 2020 and 2035 by January 1, 2010, and update the regional targets until 2050. SB 375 requires certain transportation planning and programming activities to be consistent with sustainable communities strategies contained in the regional transportation plan. The bill would also require affected regional agencies to prepare an alternative planning strategy to the sustainable communities' strategies if the sustainable communities' strategy is unable to achieve the greenhouse gas emission reduction targets. SB 375 was approved by the California State Assembly and the California Senate in August 2008.

Local

Shasta County Air Quality Management District

The project site is located in the jurisdiction of the Shasta County Air Quality Management District (AQMD). The AQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The AQMD, along with other air districts in the Sacramento Valley Air Basin (SVAB), has committed to jointly prepare the SVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin. The Plan was initially adopted in 1994 and is intended to be updated on a triennial basis. The most recent update occurred in 2006. The triennial updates of the SVAB Air Quality Attainment Plan address the progress made in implementing the AQAP and propose modifications to the strategies necessary to attain the California ambient air quality standard for the 1-hour ozone standard at the earliest practicable date. Like previous updates of the Air Quality Attainment Plan, the 2006 AQAP focuses on adoption and implementation of control measures for stationary sources, area-wide sources, and indirect sources, and addresses public education and information programs. The 2006 AQAP also addresses the effect that pollutant transport has on the north valley area's ability to meet and attain the State standards. Specific AQMD rules or programs applicable to the proposed project include the following.

For the purposes of environmental review, Shasta County has defined a substantial contribution to an existing or projected air quality violation as generation of air pollutants in excess of the thresholds shown in Table III.3. Neither Shasta County nor the State of California have an adopted standard or threshold of significance for greenhouse gas emissions. CARB has recommended the use of 10,000 metric tons of carbon dioxide equivalent per year as the "de minimus greenhouse gas emission threshold" in their Climate Change Proposed Scoping Plan, which was approved by CARB's Board in January 2009. This threshold is being considered by the California Market Advisory Committee, whose mandate under the California Environmental Protection Agency is to develop market-based compliance mechanisms for reducing greenhouse gases.

Table III.3. AQMD Air Quality Emission Thresholds (lbs/day)

Level	NO_x	ROG (VOC)	PM_{10}
A	25	25	80
B	137	137	137

Source: Tetra-Tech, EC, Inc., 2008.

Table Footnotes:

- Apply Standard Mitigation Measures (SMM) to all projects based on potential air quality impacts.
- Apply SMM and appropriate Best Available Mitigation Measures (BAMM) when a project exceeds Level "A" thresholds. The appropriate type and number of BAMM applied to a project will be based on the unique characteristics of the project. BAMM will be selected from a list of measures kept updated by the Shasta County Planning Division (SCPD) and the Shasta County Air Quality Management District (AQMD).
- Apply SMM, BAMM, and special BAMM (when project exceeds Level "B" thresholds) based on their emission reduction potential to lower project emissions below Level "B" thresholds. The AQMD will advise the SCPD of the efficiency of proposed emission measures as part of the effort to reduce project emissions below Level "B" thresholds.
- If application of the above procedures results in reducing project emissions below Level "B" thresholds, the project can proceed with an environmental determination of a Mitigated Negative Declaration assuming other project impacts do not require more extensive environmental review.
- If project emissions cannot be reduced to below Level "B" thresholds, emission offsets will be required. The SCPD may seek the assistance of the AQMD regarding other efforts and measures that could be used to reduce unmitigated emissions exceeding the 137 lbs. per day. If, after applying the emissions offsets, the project emissions still exceed the Level "B" threshold, an EIR will be required before the project can be considered for action by the reviewing authority.

Shasta County General Plan

The following *Shasta County General Plan* objectives are applicable to the proposed project:

AQ-1 To protect and improve the County's air quality in accordance with Federal and State clean air laws in order to: (1) safeguard human health, and (2) minimize crop, plant, and property damage.

AQ-2b The County will work to accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the unincorporated portions of Shasta County.

AQ-2d Shasta County shall ensure that air quality impacts identified during CEQA review are: (1) consistently and fairly mitigated, and (2) mitigation measures are feasible.

AQ-2f Shasta County shall require appropriate Standard Mitigation Measures and Best Available Mitigation Measures on all discretionary land use applications as recommended by the AQMD in order to mitigate both direct and indirect emissions of non-attainment pollutants.

AQ-2j The County shall work toward measures to reduce particulate emissions form construction, grading, excavation, and demolition to the maximum extent feasible.

There are no applicable *Shasta County General Plan* policies for a project of this nature.

Discussion

a-e. The project would not violate any adopted air quality standards or result in a cumulatively considerable increase in ozone or PM10, the pollutants of concern in Shasta County. The project would not generate any vehicle trips on a daily basis. No sensitive receptors will be exposed to pollution concentrations, nor will objectionable odors be created.

Project implementation would result in temporarily increased air emissions due to equipment emissions and earthwork. Although the emissions would include PM_{10}, impacts on air quality would be insignificant if particulate matter generation is properly controlled by implementing standard construction practices. Of particular concern are residences located on/near Bear Mountain Road; however, following implementation of Mitigation Measure III.1, impacts would be less than significant.

Project implementation would contribute cumulatively to the global problem of increased greenhouse gas emissions. Given the nature of the project, greenhouse gas emissions attributable to the proposed project would be in the form of construction emissions. The project is expected to generate negligible quantities of greenhouse gas emissions during its operational phase. Construction emissions were quantified using URBEMIS 2007 9.2.4. URBEMIS outputs, including calculations assumptions, are included in Appendix B. Based on the project components and anticipated length of project construction, greenhouse gas emissions related to the project are expected to be approximately 12 metric tons of CO2.

Using data presented in, and calculations based on, California Climate Action Registry Protocol documents (California Climate Action Registry, 2006), methane and nitrous oxide greenhouse-gas emissions, per metric ton per year of CO2, were estimated using the Global Warming Potential ratios shown in Table 5.3. Construction activities are typically associated with diesel fuel combustion, and would typically not include combustion of significant quantities of gasoline or natural gas; therefore, gasoline and natural gas combustion have not been included in these calculations. CO2 equivalent (CO2e) emissions resulting from construction of the proposed project are presented in Table 5.4.

Table III.4
Estimates of Methane and Nitrous Oxide Greenhouse-Gas Emissions
(Per metric ton per year of CO_2)

	Methane	Nitrous Oxide
Diesel Fuel Combustion	0.000046	0.000029
Gasoline Combustion	0.000193	0.000102
Natural Gas Combustion	0.000101	0.0000017

Source: California Climate Action Registry, 2006.

Table III.5
Project Construction Greenhouse Gases Emission Estimates

	CO_2	CH_4	N_2O	Total Construction CO_2e emissions
Construction-related GHG emissions	12 mt	0.00055 mt	0.00035 mt	--
Global Warming Potential (based on tons per year of CO_2)	1	21	310	--
Total Construction CO_2e emissions	12 mt	0.01155 mt	0.1085 mt	12.12 mt

Source: California Climate Action Registry, 2006 (Calculations by ENPLAN)
mt = metric ton

Total CO2e emissions resulting from construction of the proposed project would be approximately 12 metric tons.

Applicant Proposed Measures to Reduce Greenhouse Gas Emissions

The Working Draft PEA Checklist, provided by the CPUC, requires that the applicant provide Applicant Proposed Measures (APM) to reduce greenhouse gas emissions. The APMs suggested by the CPUC are similar to reduction measures provided by the California Air Pollution Control Officers Association (CAPCOA), in *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (January 2008), and the State of California in Technical Advisory: *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review* (June 2008). Emissions reduction measures applicable to the proposed project include:

- Use of ARB-certified diesel construction equipment.
- Use of alternative fuel types for construction equipment, such as biodiesel.
- Use of local building materials.
- Limiting construction vehicle idling time.

Neither the CPUC, CAPCOA, nor the State of California has designated an emissions reduction percentage for these measures. However, greenhouse gas emissions resulting from the project are considered to be minute, and implementation of the above measures, as called for in Mitigation Measure III.2, would reduce greenhouse gases even further. Impacts would be less than significant. It is possible that provision of telephone service would result in a reduction of vehicle miles travelled; if this occurs, project implementation could have a neutral or positive effect on greenhouse gas emissions in the long term.

Documentation
Shasta County General Plan, Section 6.5 Air Quality.

Northern Sacramento Valley Air Basin, 1991 Air Quality Attainment Plan

Mitigation

MITIGATION MEASURE III.1: Particulate matter emissions shall be controlled by implementing standard construction dust control measures, including but not limited to the following:

- Minimizing soil disturbance.
- Regularly watering disturbed areas, including on-site vehicle/equipment travel routes and soil stockpiles. Watering should be sufficient to prevent airborne dust from leaving the site.
- Curtailing earth-moving activities on windy days.
- Ensuring that the engines of all construction equipment are properly tuned.
- Limiting the maximum speed to 15 miles per hour on unpaved roads.
- Replanting vegetation in disturbed areas as quickly as possible.
- Implementing other effective particulate matter control measures, as needed.

MITIGATION MEASURE III.2: Greenhouse gas emissions generated during project construction shall be minimized by implementing the following:

- Using ARB-certified diesel construction equipment.
- Using alternative fuel types for construction equipment, such as biodiesel.
- Using local building materials.
- Limiting construction vehicle idling time.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the proposal:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
Hatchet Mountain	❑	❑	X	❑
Round Mountain	❑	X	❑	❑
Bear Mountain	❑	❑	X	❑
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	❑	❑	❑	X
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❑	❑	❑	X
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❑	X	❑	❑
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❑	X	❑	❑
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❑	❑	❑	X

Regulatory Setting

Because no wetlands or other waters of the state or United States would be affected by the proposed construction activities, the following commonly encountered regulatory provisions do not apply to the proposed project:

Section 404 of the Clean Water Act
Section 401 of the Clean Water Act
California Fish and Game Code Section 1600-1616

Federal, state and local regulations that are or may be applicable to the proposed project are described below.

Federal Regulations

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA), the U.S. Fish and Wildlife Service and National Marine Fisheries Service have authority over projects that may result in take of a federally listed species. Under the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The definition of "harm" is interpreted to include significant habitat modification that could result in take. If a project has a likelihood to result in take of a federally listed species, either an incidental take permit, under Section 10(a) of the ESA, or a federal interagency consultation, under Section 7 of the ESA, is required.

Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act, implemented to put an end to the commercial trade in birds and their feathers, states that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The Migratory Bird Treaty Act affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protects selected species of birds that are common to both countries (i.e., they occur in both countries at some point during their annual life cycle). Typical mitigation to avoid impacts to nesting migratory birds may include limiting vegetation removal activities to specific times of the year when nesting migratory birds would not be affected.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, a permit from the California Department of Fish and Game is required for projects that could result in the take of a state-listed Threatened or Endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the federal ESA does. As a result, the threshold for a take under the CESA is higher than that under the ESA.

California Fish and Game Code §3503.5: Protection of Raptors

Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity, which may cause nest abandonment and reproductive failure.

Porter-Cologne Act

The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the Regional Water Quality Control Boards (RWQCBs) power to protect water quality. The State may also use its jurisdiction under the Porter-Cologne Act to regulate discharges into wetlands and other waters that are not subject to federal jurisdiction. Such regulation occurs through issuance of Waste Discharge Requirements (WDRs) or waivers of WDRs. Dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

California Oak Woodland Conservation Act

The California Environmental Quality Act, as amended in 2004 with the passage of Senate Bill 1334, requires a county to determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that a project will have a significant

effect on oak woodlands, the county shall require implementation of one or more oak woodland mitigation alternatives.

Forest Practice Act.
The California Department of Forestry and Fire Protection (CAL FIRE) enforces the laws that regulate logging on privately-owned lands in California. These laws are found in the Forest Practice Act, which was enacted in 1973 to ensure that logging is done in a manner that will preserve and protect fish, wildlife, forests, and streams. CAL FIRE requires that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and Board rules apply to all commercial harvesting operations for landowners of small parcels, to ranchers owning hundreds of acres, and large timber companies with thousands of acres. The Timber Harvesting Plan (THP) is the environmental review document submitted by landowners to CAL FIRE outlining what timber will be harvested, how it will be harvested, and the steps that will be taken to prevent damage to the environment. THPs are prepared by Registered Professional Foresters who are licensed to prepare these comprehensive, detailed plans.

Local Regulations
Shasta County General Plan
The following *Shasta County General Plan* objective is applicable to the proposed project:
FW-1 Protection of significant fish, wildlife and vegetation resources.

The following *Shasta County General Plan* policy is applicable to the proposed project:
FW-c Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

Environmental Setting
The Biological Resources section contains a description of the existing biological resources at the Hatchet Mountain project site, Round Mountain project site, and Bear Mountain project site, including common vegetation and wildlife resources, wetlands, and special-status species that are known, or have the potential to occur, in the area. This section also includes an analysis of the impacts the proposed project may have on biological resources and recommended mitigation measures.

Hatchet Mountain.
A biological and wetland evaluation, including a records search and field survey, was completed for the project site by ENPLAN (Appendix C). The field evaluation was conducted on June 26 and July 24, 2009.

The project site occurs within an opening in the montane coniferous forest atop of Hatchet Ridge, and is situated at approximately 5,300 feet above sea level. The site is sparsely populated by trees and shrubs. Trees present on or adjacent to the project site include white fir, ponderosa pine, and California black oak. The shrubs consist predominantly of green-leaved manzanita, hoary coffeeberry, and snowberry. The herbaceous layer is well developed, and is composed of an assortment of grasses, wildflowers, and sedge, including needlegrass, bromes, lupines, diamond clarkia, Plumas County beard-tongue, and long-stoloned sedge.

Round Mountain.
A biological evaluation, including a records search and field surveys, was completed for the project site by ENPLAN (Appendix D). The field evaluation was conducted on June 26 and July 16, 2009.

The project site on Round Mountain occurs in a mixed coniferous forest, and is situated between approximately 2,600 and 3,400 feet in elevation above sea level. The canopy layer consists of California black oak, canyon live oak, big-leaf maple, incense cedar, white fir, ponderosa pine, and Douglas-fir. The shrub layer includes deerbrush, California buckeye, green-leaved manzanita, white-leaved manzanita, poison oak, and hoary coffeeberry. The herbaceous layer is composed of bracken fern, sword fern, Klamathweed, and an assortment of other wildflowers and grasses.

Bear Mountain.
A biological and wetland evaluation, including a records search and field surveys, was completed for the project site by ENPLAN (Appendix E). The field evaluation was conducted on June 26 and July 24, 2009.

The project site on Bear Mountain occurs in a mixed coniferous forest, and is situated between approximately 1,100 and 2,600 feet in elevation above sea level. The canopy layer is composed predominantly of ponderosa pine, grey pine, Douglas-fir, canyon live oak, blue oak, California black oak, interior live oak, and big-leaved maple. Shrubs present include poison oak, snowberry, buckbrush, California buckeye, and deerbrush. The herbaceous layer is typically sparse, and includes various clovers, vetch, lupine, grasses and many other species.

The following assessment of potential impacts to biological resources is based on biological studies completed for the project sites.

Discussion

a. ***Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?***

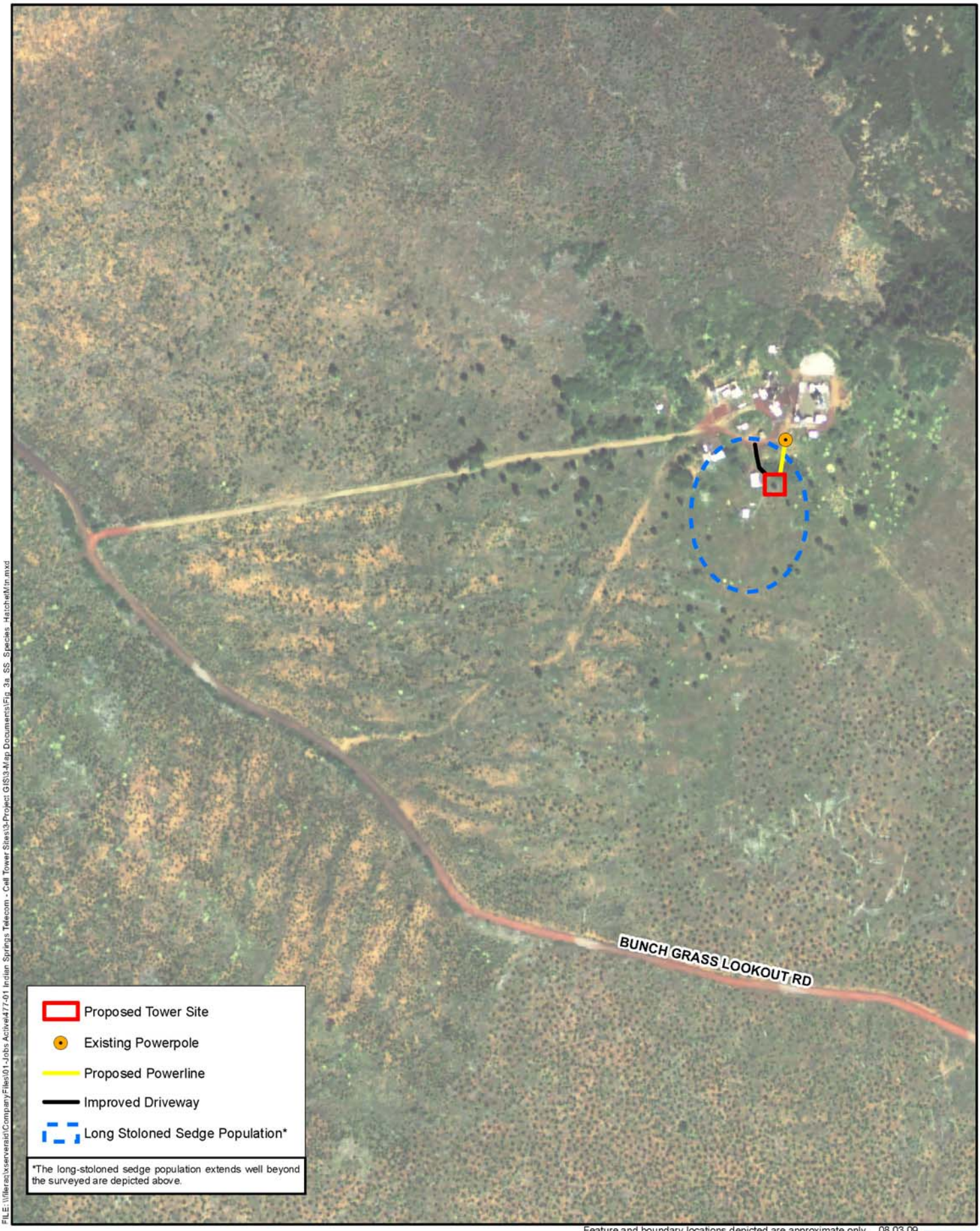
Hatchet Mountain.

Special-Status Plant Species: Review of California Natural Diversity Database (CNDDB) records showed that no special-status plant species have been previously reported on the project site. As shown in Table IV.1a, eighteen special-status plant species are known to occur in the project vicinity: Butte County morning glory, Callahan's mariposa lily, English Peak greenbriar, English sundew, hairy marsh hedge-nettle, little hulsea, long-haired star-tulip, long-leaved starwort, long-stiped campion, northern clarkia, profuse-flowered pogogyne, rattlesnake fern, Red Bluff dwarf rush, Santa Lucia dwarf rush, slender Orcutt grass, tufted loosestrife, woolly fruited sedge, and woolly meadowfoam. The potential for these species to utilize the towersite is discussed in the Biological Study for Hatchet Ridge Cell Tower Site. (Table 2a, Appendix C)

Potentially suitable habitat occurs on the site for Butte County morning glory, little hulsea, and long-stiped campion. These species would have been identifiable at the time the field surveys were conducted, but were not observed and are not expected to be present. However, one other special-status plant species, long-stoloned sedge, was observed during the botanical surveys of the project site.

Long-stoloned sedge occurs throughout the project site and is widespread in the immediate vicinity. Figure 3a shows lands on which the sedge is abundant; the sedge population extends well beyond the limits of the study area, but no attempt was made to delineate the full extent of the population. Project implementation would result in the unavoidable loss of a number of plants, although only a small portion of the population would be affected. This species is not state or federally listed, but is monitored by the California Native Plant Society (CNPS). Long-stoloned sedge is on the CNPS List 3 (Plants Rare, Threatened, or Endangered in California and Elsewhere), but has recently been recommended for reclassification as a List 4 species (Plants of Limited Distribution – A Watch List).

DFG recognizes that Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for state listing, and the Department recommends they be addressed in CEQA projects. However, a plant need not be in this Inventory to be considered a rare, threatened, or endangered species under CEQA. DFG recommends, and local governments may require, protection of regionally significant plants, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4. Although avoidance of long-stoloned sedge is encouraged by DFG, mitigation for the loss of plants is not currently required.



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Feature and boundary locations depicted are approximate only. 08.03.09

0 300 Feet

Figure 3a

Special Status Species - Hatchet Mountain

ENPLAN

Special-Status Wildlife Species: Review of CNDDB records showed that no special-status animal species have been previously reported on the project site. As shown in Table IV.1a, sixteen special-status wildlife species are known to occur in the project vicinity: American badger, American peregrine falcon, bald eagle, bigeye marbled-sculpin, California wolverine, Cascades frog, foothill yellow-legged frog, hardhead, northern goshawk, northern red-legged frog, osprey, Pacific fisher, Pit roach, rough sculpin, silver-haired bat, and western tailed frog. In addition, the CNDDB records search identified four non-status wildlife species within the search radius: canary dusky snail, great blue heron, kneecap lanx, and scalloped juga. The potential for each of these species to utilize the project site is addressed in Table 2 in Appendix C.

No special-status wildlife species were observed during the wildlife field surveys. However, based on habitat evaluation, one special-status wildlife species, silver-haired bat, could potentially roost on or adjacent to the project site.

Silver-haired bats primarily roost in hollow trees, snags, rock crevices, caves, and under bark. Tree removal could result in the minor loss of roosting habitat. However, because of the vast amount of suitable habitat elsewhere in the immediate vicinity, this is not considered a significant impact.

Indirect impacts to special-status species that utilize aquatic habitats could occur if substantial quantities of sediment were to wash into downslope drainages. As discussed below under Section VI: Geology and Soils, implementation of erosion controls would be required during project construction. Such measures may include limiting construction to the dry season; use of straw wattles, sediment fencing, and/or gravel berms to prevent sediments from entering drainages; and revegetating disturbed sites upon completion of construction. Periodic monitoring of the erosion controls is required, and they must be maintained as needed. Given these existing requirements for erosion control, the potential for indirect impacts on special-status species that utilize aquatic habitats is less than significant.

Impacts would be less than significant.

Table IV.1a: Rarefind (CNDDB) Report Summary (*Hatchet Mountain)*

Rarefind (CNDDB) Report Summary (August 2009 Data)												
Listed Element	Quadrangle[1]											Status[2]
	BF	RC	CM	MM	HM	BU	CA	MC	JB	BE	BW	
Animals												
American badger												SSC
American peregrine falcon				●								FD, SE
Bald eagle			●			●						FD, SE
Big-eye marbled sculpin			●									SSC
California wolverine			●			●					●	ST, SFP
Canary dusky snail	●											None
Cascades frog						●						SSC
Foothill yellow-legged frog			●									SSC
Great blue heron											●	None
Hardhead	●		●			●						SSC
Kneecap lanx	●					●						None
Northern goshawk		●	●		●						●	SSC
Northern red-legged frog						●						SSC
Osprey		●	●			●	●				●	SSC
Pacific fisher			●							●	●	FC, SSC
Pit Roach	●		●									SSC
Rough sculpin			●									ST
Scalloped juga	●					●						None
Silver-haired bat					●			●				SSC
Western tailed frog					●							SSC
Plants												
Butte County morning-glory		●	●		●			●				4.2
Callahan's mariposa-lily		●										1B.1
English Peak greenbriar		●	●		●							1B.3
English sundew						●						2.3
Hairy marsh hedge-nettle											●	2.3
Little hulsea											●	2.3
Long-haired star-tulip						●					●	1B.2
Long-leaved starwort						●						2.2
Long-stiped campion			●								●	1B.2
Northern clarkia		●						●				1B.3
Profuse-flowered pogogyne						●						1B.2
Rattlesnake fern		●										2.2
Red Bluff dwarf rush						●						1B.1
Santa Lucia dwarf rush									●		●	1B.2
Slender Orcutt grass						●						FT, SE, 1B.1
Tufted loosestrife						●						2.3
Woolly-fruited sedge			●									2.3
Woolly meadowfoam			●									4.2
Natural Communities												
Lower Pit River/Canyon River (hardhead/tule perch river)	●	●	●			●		●				NA
Northern basalt flow vernal pool						●						NA
Northern interior cypress forest								●			●	NA

Highlighting denotes the quadrangle in which the project site is located. No occurrences were reported inside the study radius in the Skunk Ridge quadrangle.

[1]Quadrangle Code

BF = Burney Falls	BU = Burney	HM = Hatchet Mountain Pass
RC = Roaring Creek	CA = Cassel	BE = Burney Mountain East
CM = Chalk Mountain	MC = Montgomery Creek	BW = Burney Mountain West
MM = Miller Mountain	JB = Jacks Backbone	

[2]Status Codes

Federal/State

FE = Federally Listed – Endangered	FD = Federally Delisted	SSC = State Species of Concern (CDFG)
FT = Federally Listed – Threatened	SE = State Listed – Endangered	
FC = Federal Candidate Species	ST = State Listed – Threatened	

California Native Plant Society

1B.1 = Plants Rare, Threatened or Endangered in California and Elsewhere; Seriously Threatened in California
1B.2 = Plants Rare, Threatened or Endangered in California and Elsewhere; Fairly Threatened in California
1B.3 = Plants Rare, Threatened, or Endangered in California and Elsewhere; Not Very Endangered in California
2.2 = Plants Rare, Threatened or Endangered in California Only; Fairly Threatened in California
2.3 = Plants Rare, Threatened or Endangered in California Only; Not Very Threatened in California
3.2 = More Information is Needed; Fairly Threatened in California
4.2 = Plants of Limited Distribution – A Watch List; Fairly Threatened in California

Round Mountain

Special-Status Plant Species: Review of California Natural Diversity Database (CNDDB) records showed that no special-status plant species have been previously reported on the project site. As shown in Table IV.1b, nine special-status plant species are known to occur in the project vicinity: Butte County fritillary, Butte County morning glory, Callahan's mariposa lily, English Peak greenbriar, northern clarkia, rattlesnake fern, Shasta ageratina, Shasta clarkia, and Shasta snow-wreath. The potential for these species to utilize the tower, access road, and/or powerline sites is discussed in Table 2, Appendix D.

Botanical surveys found three special-status plant species within the study area: northern clarkia, Butte County morning glory, and silvery false lupine (Figure 3b). Potentially suitable habitat occurs on the site for Butte County fritillary, Callahan's mariposa lily, and Shasta clarkia. Dried remains of a fritillary (two plants) were observed in the proposed powerline corridor. The plants could not be identified to the species level, and could potentially be the special-status fritillary. However, given its listing status, the Department of Fish and Game is not currently requesting mitigation for the loss of Butte County fritillary populations. Callahan's mariposa lily and Shasta clarkia would have been identifiable at the time the field surveys were conducted, but were not observed and are not expected to be present.

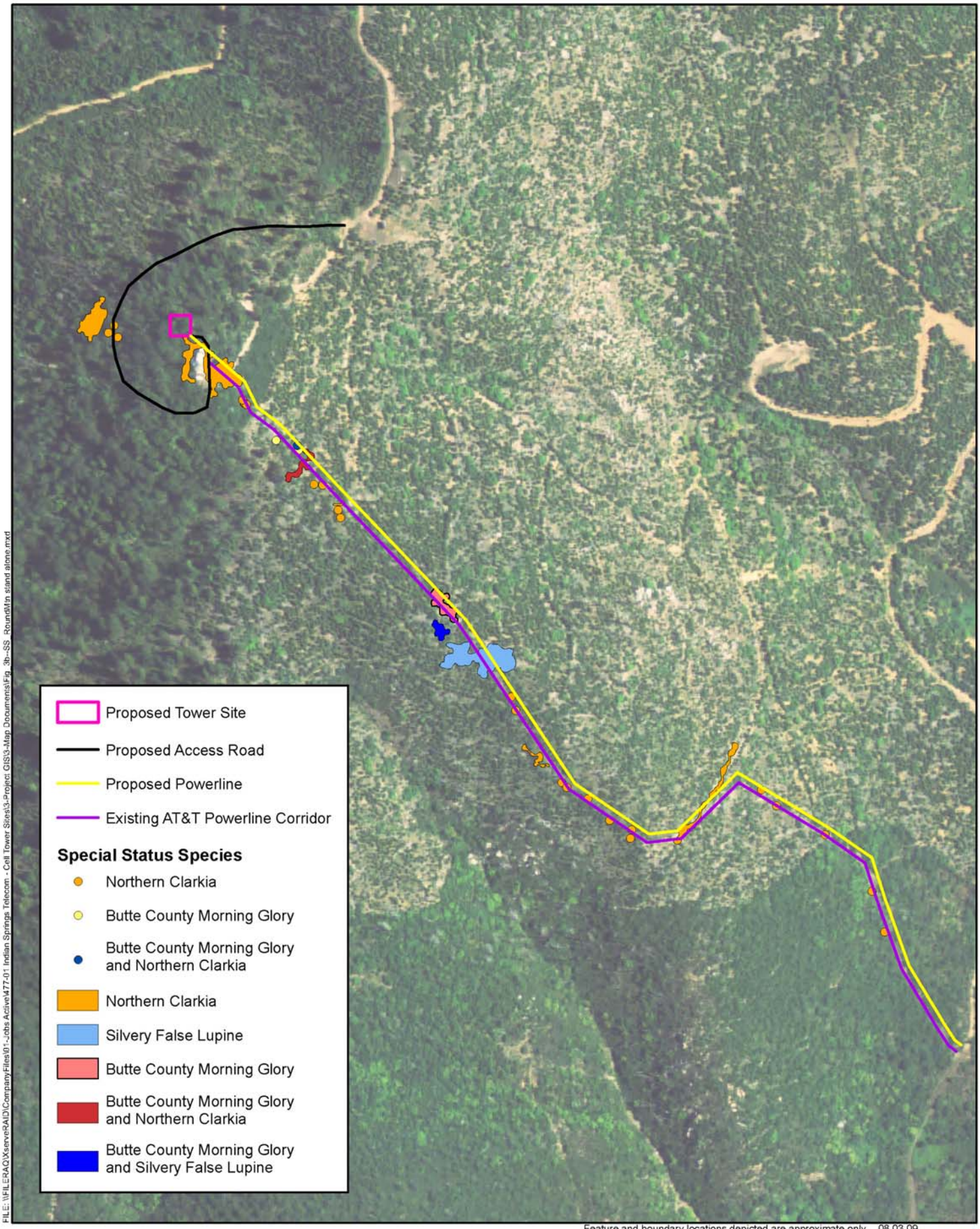
Northern clarkia is widespread on the project site, occurring at the proposed cell tower site and in the proposed powerline and access road corridors. Roughly 3,000 individuals were observed in and adjacent to the study area. Butte County morning glory is present along the powerline corridor, with an estimated 500 plants observed. A small population of silvery false lupine is present within the proposed cell tower site, and the plant is much more abundant along the proposed powerline corridor; an estimated 5,000 plants were observed. These special-status plant species are not state or federally listed, but are monitored by the California Native Plant Society (CNPS). Northern clarkia is on the CNPS List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), while Butte County morning glory and slender false lupine are on CNPS List 4 (Plants of Limited Distribution).

The DFG recognizes that Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for state listing, and the Department recommends they be addressed in CEQA projects. However, a plant need not be in this Inventory to be considered a rare, threatened, or endangered species under CEQA. The DFG recommends, and local governments may require, protection of regionally significant plants, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4.

Project implementation would result in the loss of populations of northern clarkia, Butte County morning glory, and silvery false lupine, and could potentially result in the loss of a small population of Butte County fritillary. DFG typically recommends mitigation for the loss of northern clarkia plants. Although avoidance of Butte County morning glory, slender false lupine, and Butte County fritillary (if present) is encouraged by DFG, mitigation for the loss of these plants is not currently required. Given the abundance of northern clarkia in and adjacent to the road and powerline corridors, full avoidance is not possible. However, measures can be implemented to minimize construction disturbance within populations of northern clarkia as well as the other special-status plants.

MITIGATION MEASURE IV.1*:* Loss of northern clarkia at the Round Mountain site shall be minimized through implementation of the following measures:

- A qualified botanist shall flag and map the extent of northern clarkia populations in and adjacent to the study area; such work shall be conducted during the plant's blooming period (late June-July) and prior to initiation of construction.
- Under supervision of the qualified botanist, and in consultation with the construction project manager, temporary construction fencing shall be installed to protect the northern clarkia to the



Feature and boundary locations depicted are approximate only. 08.03.09

0 300 Feet

Figure 3b

Special Status Species - Round Mountain

ENPLAN

- maximum extent feasible. The fencing shall be maintained throughout the duration of project construction.
- Stockpiling of materials and equipment shall not be allowed within the population boundary.
- Minor adjustments to the proposed powerline route shall be made to minimize disturbance of northern clarkia; where full avoidance is not feasible, the width of construction disturbance shall be minimized.

Special-Status Wildlife Species: Review of CNDDB records showed that no special-status animal species have been previously reported on the project site. As shown in Table IV.1b, fifteen special-status wildlife species are known to occur in the project vicinity: American peregrine falcon, bald eagle, California wolverine, Cascades frog, foothill yellow-legged frog, northern goshawk, northwestern pond turtle, osprey, Pacific fisher, purple martin, Shasta salamander, silver-haired bat, spotted bat, Townsend's big-eared bat, and western tailed frog. The CNDDB records search also identified three non-status wildlife species within the search radius: Oregon shoulderband, Shasta hesperian, and Shasta sideband. The potential for each of these species to utilize the project site is addressed in Table 2, Appendix D.

No special-status wildlife species were observed during the wildlife field surveys. However, based on habitat evaluation, three special-status bat species could roost on or adjacent to the site. These species are silver-haired bat, spotted bat, and Townsend's big-eared bat.

Silver-haired bats primarily roost in hollow trees, snags, rock crevices, caves, and under bark. Spotted bats and Townsend's big-eared bats often roost in man-made structures, but also utilize caves and rock crevices. Tree removal could result in the minor loss of roosting habitat for silver-haired bats; no structures are proposed to be removed. Because of the vast amount of suitable roosting habitat for bats elsewhere in the immediate vicinity, the minor loss of bat habitat associated with project implementation is not considered a significant impact.

Indirect impacts to special-status species that utilize aquatic habitats could occur if substantial quantities of sediment were to wash into downslope drainages. As discussed below under Section VI: Geology and Soils, implementation of erosion controls would be required during project construction. Such measures may include limiting construction to the dry season; use of straw wattles, sediment fencing, and/or gravel berms to prevent sediments from entering drainages; and revegetating disturbed sites upon completion of construction. Periodic monitoring of the erosion controls is required, and they must be maintained as needed. Given these existing requirements for erosion control, the potential for indirect impacts on special-status species utilizing aquatic habitats is less than significant.

Impacts would be less than significant with mitigation incorporated.

Table IV.1b: Rarefind (CNDDB) Report Summary (*Round Mountain)*

Rarefind (CNDDB) Report Summary (August 2009 Data)											
Listed Element	Quadrangle[1]										Status[2]
	GG	RC	CM	DR	MC	MM	HM	OR	WH	MI	
Animals											
American peregrine falcon				●		●					FD, SE
Bald eagle				●							FD, SE
California wolverine			●								ST, SFP
Cascades frog										●	SSC
Foothill yellow-legged frog				●		●				●	SSC
Northern goshawk		●			●		●				SSC
Northwestern pond turtle				●	●	●		●	●		SSC
Oregon shoulderband	●			●		●					None
Osprey		●									SSC
Pacific fisher				●							FC, SSC
Purple martin				●							SSC
Shasta hesperian				●							None
Shasta salamander	●			●	●	●					ST
Shasta sideband				●							None
Silver-haired bat				●	●		●			●	SSC
Spotted bat	●										SSC
Townsend's big-eared bat				●		●					SSC
Western tailed frog							●				SSC
Plants											
Butte County fritillary	●			●	●				●	●	3.2
Butte County morning-glory		●	●		●		●				4.2
Callahan's mariposa lily		●							●		1B.1
English Peak greenbriar		●					●				1B.3
Northern clarkia	●	●	●	●	●						1B.3
Rattlesnake fern									●	●	2.2
Shasta ageratina				●							1B.2
Shasta clarkia				●				●			1B.1
Shasta snow-wreath	●			●							1B.2
Natural Communities											
Alkali seep									●		NA
Lower Pit River/Canyon River (hardhead/tule perch river)		●		●	●						NA
Northern interior cypress forest					●						NA

4.2 = Plants of Limited Distribution – A Watch List; Fairly Threatened in California
Highlighting denotes the quadrangle in which the project site is located. No occurrences were reported inside the study radius in the Bella Vista quadrangle.

[1]Quadrangle Code

GG = Goose Gap
RC = Roaring Creek
CM = Chalk Mountain
DR = Devils Rock
MM = Minnesota Mountain
MC = Montgomery Creek
HM = Hatchet Mountain Pass
OR = Oak Run
WH = Whitmore
MI = Miller Mountain

[2]Status Codes

Federal/State

FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FSC = Federal Species of Concern
FC = Federal Candidate Species
FD = Federally Delisted
SE = State Listed – Endangered
ST = State Listed – Threatened
SSC = State Species of Concern (CDFG)

California Native Plant Society

1B.1 = Plants Rare, Threatened or Endangered in California and Elsewhere; Seriously Threatened in California
1B.2 = Plants Rare, Threatened or Endangered in California and Elsewhere; Fairly Threatened in California
1B.3 = Plants Rare, Threatened, or Endangered in California and Elsewhere; Not Very Endangered in California
2.2 = Plants Rare, Threatened or Endangered in California Only; Fairly Threatened in California
3.2 = More Information is Needed; Fairly Threatened in California

Bear Mountain

Special-Status Plant Species: Review of California Natural Diversity Database (CNDDB) records showed that no special-status plant species have been previously reported on the project site. As shown in Table IV.1c., nine special-status plant species are known to occur in the project vicinity: Bellinger's meadowfoam, Henderson's bent grass, northern clarkia, oval-leaved viburnum, Shasta ageratina, Shasta clarkia, Shasta snow-wreath, silky cryptantha, and woolly meadowfoam. The potential for these species to utilize the tower and powerline sites is discussed in Table 2, Appendix E.

Potentially suitable habitat occurs on the site for northern clarkia, Shasta clarkia, and oval-leaved viburnum. Although these species would have been identifiable at the time the botanical surveys were conducted, none of these or other special-status plant species were observed on the project site during the botanical surveys, nor are they expected to be present. Project implementation would thus not affect special-status plant species.

Special-Status Wildlife Species: Review of CNDDB records showed that no special-status animal species have been previously reported on the project site. As shown in Table IV.1c, nine special-status wildlife species are known to occur in the project vicinity: American peregrine falcon, bald eagle, foothill yellow-legged frog, northwestern pond turtle, Pacific fisher, purple martin, Shasta salamander, silver-haired bat, and Townsend's big-eared bat. The CNDDB records search also identified five non-status wildlife species in the search radius: Klamath sideband, kneecap lanx, Oregon shoulderband, Shasta sideband, and Yuma myotis. The potential for each of these species to utilize the project site is addressed in Table 2, Appendix E.

No special-status wildlife species were observed during the wildlife field surveys. However, based on habitat evaluation, two special-status bat species could potentially be present: silver-haired bat and Townsend's big-eared bat. The non-status Yuma myotis could also be present.

Silver-haired bats primarily roost in hollow trees, snags, rock crevices, caves, and under bark. Townsend's big-eared bats and Yuma myotis bats often roost in man-made structures, but also utilize caves and rock crevices. Tree removal could result in the minor loss of roosting habitat for silver-haired bats; no structures are proposed to be removed. Because of the vast amount of suitable roosting habitat for bats elsewhere in the immediate vicinity, the minor loss of bat habitat is not considered a significant impact.

Indirect impacts to special-status species that utilize aquatic habitats could occur if substantial quantities of sediment were to wash into downslope drainages. As discussed below under Section VI: Geology and Soils, implementation of erosion controls would be required during project construction. Such measures may include limiting construction to the dry season; use of straw wattles, sediment fencing, and/or gravel berms to prevent sediments from entering drainages; and revegetating disturbed sites upon completion of construction. Periodic monitoring of the erosion controls is required, and they must be maintained as needed. Given these existing requirements for erosion control, the potential for indirect impacts on special-status species that utilize aquatic habitats is less than significant.

Impacts would be less than significant.

Table IV.1c: Rarefind (CNDDB) Report Summary (*Bear Mountain)*

Rarefind (CNDDB) Report Summary (August 2009 Data)										
Listed Element	Quadrangle[1]									Status[2]
	BM	OB	MM	DR	PC	SD	BV	OR	EN	
Animals										
American peregrine falcon	●			●						FD, SE
Bald eagle		●	●	●	●		●			FD, SE
Foothill yellow-legged frog		●	●	●		●				SSC
Klamath sideband	●	●								None
Kneecap lanx		●								None
Northwestern pond turtle		●	●	●	●			●	●	SSC
Oregon shoulderband	●	●	●		●					None
Pacific fisher	●	●			●	●	●			FC, SSC
Purple martin			●	●			●			SSC
Shasta salamander	●	●	●	●	●	●	●			ST
Shasta sideband		●	●	●	●					None
Silver-haired bat		●							●	SSC
Townsend's big-eared bat			●	●						SSC
Yuma myotis	●	●								None
Plants										
Bellinger's meadowfoam								●		1B.2
Henderson's bent grass								●		3.2
Northern clarkia		●			●					1B.3
Oval-leaved viburnum							●			2.3
Shasta ageratina		●								1B.2
Shasta clarkia								●		1B.1
Shasta snow-wreath		●	●		●					1B.2
Silky cryptantha					●				●	1B.2
Woolly meadowfoam							●	●		4.2

Highlighting denotes the quadrangle in which the project site is located. No occurrences were reported inside the study radius in the Clough Gulch, Palo Cedro, and Redding quadrangles.

[1]Quadrangle Code

BM = Bohemotash Mountain
OB = O'Brien
MM = Minnesota Mountain
DR = Devils Rock
SD = Shasta Dam
PC = Project City
BV = Bella Vista
OR = Oak Run
EN = Enterprise

[2]Status Codes

Federal/State

FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FD = Federally Delisted
SE = State Listed – Endangered
ST = State Listed – Threatened
SSC = State Species of Concern (CDFG)

California Native Plant Society

1B.1 = Plants Rare, Threatened or Endangered in California and Elsewhere; Seriously Threatened in California
1B.2 = Plants Rare, Threatened or Endangered in California and Elsewhere; Fairly Threatened in California
1B.3 = Plants Rare, Threatened, or Endangered in California and Elsewhere; Not Very Endangered in California
2.3 = Plants Rare, Threatened or Endangered in California Only; Not Very Threatened in California
3.2 = More Information is Needed; Fairly Threatened in California
4.2 = Plants of Limited Distribution – A Watch List; Fairly Threatened in California

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

CNDDB records show that three sensitive natural communities have been reported in the Hatchet Mountain study vicinity (Northern Interior Cypress Forest, Northern Basalt Flow Vernal Pool, and Lower Pit River/Canyon River (Hardhead/Tule Perch River)). Three sensitive natural communities have also been reported in the Round Mountain study vicinity (Northern Interior Cypress Forest, Alkali Seep, and Lower Pit River/Canyon River (Hardhead/Tule Perch River). No sensitive natural communities have been reported in the Bear Mountain study vicinity. As a result of the biological field surveys, it was determined that none of these communities occur on or adjacent to the proposed work areas. Likewise, no aquatic or riparian habitats are present. No sensitive natural communities would be impacted by project implementation. There would be no impact.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

ENPLAN inspected all three sites to document the presence of wetlands and other waters of the United States. The field inspection found no wetlands or other waters on any of the project sites. Project implementation would therefore have no adverse effects on federally protected wetlands or other waters. There would be no impact.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Project implementation would not interfere with the seasonal migration of black-tailed deer, Rocky Mountain elk, or other migratory mammals, nor would it create barriers to anadromous fish passage.

The Round Mountain and Bear Mountain project sites have a moderate potential to support nesting by raptors and migratory birds. The Hatchet Mountain site, which has much less woody vegetation, has a low potential to support such nesting. If present, active nests could be lost during vegetation removal or could be disturbed by on-site construction activities, potentially resulting in nest abandonment and mortality of chicks and eggs. While no nests were observed during the field survey, they could be present in the future.

Loss or disturbance of active nests would be a significant impact. Implementation of Mitigation Measure IV.2 would preclude adverse impacts on active nests of raptors and migratory birds.

MITIGATION MEASURE IV.2*:* To ensure that active nests of raptors and migratory birds are not disturbed, vegetation removal shall be avoided during the nesting season (generally March 1 to July 31), to the extent possible. If vegetation removal must occur during the nesting season, a focused survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the project site. The survey shall be conducted no more than 30 days prior to the beginning of construction or tree removal. If nesting birds are found during the focused survey, the nest tree(s) shall not be removed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no construction shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the Department of Fish and Game (the size of the construction buffer zone may vary depending on the species of nesting birds present).

Impacts would be less than significant with mitigation incorporated.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Project implementation is not expected to result in any conflicts with any local policies or ordinances protecting biological resources. Project implementation would result in the removal of conifers and oaks, and would be subject to the requirements the California Forest Practice Act and the Oak Woodland Conservation Act. Both the Hatchet Mountain and Round Mountain sites are within designated timberlands. A number of conifers would be removed from the Round Mountain site, and one or more conifers may be removed at the Hatchet Mountain site. Conifers would also be removed from the Bear Mountain site, but this site may not qualify as a "timberland" and may not be subject to requirements of the Forest Practice Act. A Timber Harvest Plan (or exemption) must be prepared by a Registered Professional Forester, and must be reviewed by and accepted by the California Department of Forestry and Fire Protection. To ensure compliance with existing standards, the Registered Professional Forester should evaluate all three work sites to determine the extent of coverage needed to comply with the Act.

The Oak Woodland Conservation Act addresses removal of oaks with a diameter of five inches at breast height (dbh) or larger. Oak woodlands are generally defined as lands supporting native oaks, with the oaks providing at least ten percent canopy closure. Based on aerial photograph review and field inspection, neither the Hatchet Mountain nor Round Mountain sites meet this canopy coverage threshold. The Hatchet Mountain site has no mature oaks, while most of the oaks in the Round Mountain study area are Brewer oaks, which are small oaks generally less than 15 feet in height and with diameters less than 5 inches dbh. Although a few black oaks and live oaks in the Round Mountain study area have diameters of five inches dbh or greater, they do not provide ten percent of the total canopy cover. At least portions of the Bear Mountain site appear to meet the 10 percent canopy coverage threshold.

As called for in Mitigation Measure IV.3, removal of trees greater than 5 inches dbh should be avoided where feasible. Given the moderate number of mature trees to be removed, the limited extent of permanent impacts, and implementation of Mitigation Measure IV.3, the residual impact on native oaks and conifers would be less than significant.

MITIGATION MEASURE IV.3: The loss of native oaks and conifers with a diameter at breast height (dbh) of five inches or greater shall be avoided to the extent feasible, as determined by a qualified botanist in consultation with the construction project manager. Measures may include minimizing the width of the construction corridor to avoid mature trees, installing temporary construction fencing to protect trees, limiting staging areas to lands that do not support mature trees, and other actions deemed appropriate during pre-construction field evaluation.

Impacts would be less than significant with mitigation incorporated.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No local, regional, or state conservation plans, including Habitat Conservation Plans or Natural Community Conservation Plans, apply to any of the three project sites or project vicinities. The project will have no impact on lands designated for habitat conservation purposes. There would be no impact.

Documentation

Shasta County General Plan, Section 6.2 Timberlands, and Section 6.7 Fish and Wildlife Habitat

California Department of Fish and Game. 2004. *California Natural Diversity Data Base, RareFind Print-Out, Dated August 2009.*

Shasta County Department of Resource Management. 2008. Final Environmental Impact Report for the Hatchet Ridge Wind Project.

Scott Hill/DFG pers comm. August 2009.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the proposal:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?	❑	X	❑	❑
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	❑	X	❑	❑
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❑	❑	❑	X
d. Disturb any human remains, including those interred outside of formal cemeteries?	❑	X	❑	❑

Environmental Setting

A cultural resources study, including a record search and a field survey, was completed for the project area by ENPLAN (2009) (included in Appendix F). A record search with the Northeast California Information Center at CSU, Chico, and other sources indicated that no historic or prehistoric sites have previously been recorded within the project area.

Project Area Context *(References are included in the Cultural Resources Inventory for the Proposed Indian Springs Telecommunications Project, Shasta County, CA, ENPLAN. 2009, Appendix F.)*

Hatchet Mountain

Environment

The project site occurs within an opening in the montane coniferous forest atop Hatchet Ridge, and is situated at approximately 5,300 feet above sea level. The site is sparsley populated by trees and shrubs. Trees present on or adjacent to the project site include white fir, ponderosa pine, and California black oak. The shrubs consist predominantly of green-leaved manzanita, hoary coffeeberry, and snowberry. The herbaceaous layer is well developed, and is composed of an assortment of grasses, wildflowers, and sedge, including needlegrass, bromes, lupines, diamond clarkia, Plumas County beard-tongue, and long stoloned sedge (ENPLAN 2009).

Historic land use in the vicinity included logging, agriculture, and homesteading. Current land use in the project site consists of commercial timber harvesting and the development of the site for a number of existing telecommunication facilities.

Ethnographic

According to ethnographic information, the Atsuge inhabited the project vicinity at the time of European-American contact in the late 1820s. Kroeber (1925), Garth (1953), and Kniffen (1928) are primary sources of ethnographic information, and Garth (1978) provides summary work. The following brief descriptions are derived from those sources.

The Atsuge, or "pine-tree people," and the Apwaruge formed the Atsugewi language group of the Palaihnihan branch of the Hokan liguistic stock (which also included the Achumawi). The Atsuge occupied the lava valleys from Mount Lassen to just north of Burney. The western territorial boundary extended to the headwaters of Montgomery and Old Cow Creeks, and the eastern boundary extended to Poison Lake, and Black and Bald Mountains. The Apwaruge occupied areas east of the Atsuge, and the boundary separating the Atsugewi and the Achumawi was located about two miles north of Burney.

Atsuge subsistence/settlement strategies can best be described as semi-sedentary, or transhumant. Year-round villages were common, as were summer camps maintained by members of the base village for their own exclusive use. Village sites, containing from 5 to 25 separate dwellings, housing from 25 to 100 individuals, were most often situated on small knolls or on the lower slopes of mountains and ridges near streams and springs. Economic activities consisted of the collection of plant foods, hunting, and fishing. The main staples of the diet were acorns, deer, small game, and fish. Fisheries and acorns were of paramount importance in subsistence. The Atsugewi made extensive use of virtually all plant, animal, and lithic resources within their territory, resulting in a rich and diverse collection of utilitarian and non-utilitarian items. Extensive trade existed between the Achumawi, Maidu, Paiute, Yana, and most importantly, the Apwaruge.

As the result of many legal battles with the Federal and California governments from 1928 to recent times, the Pit River Tribe has received Federal recognition of their tribal status, enabling them to provide medical/housing facilities and job opportunities to their tribal members.

Prehistoric

The earliest systematic archaeological investigations in northern California were conducted during the 1930s and 1940s and were associated with the construction of Shasta Dam. Smith and Weymouth (1952) recorded a large number of prehistoric midden sites along the Sacramento, Pit and McCloud Rivers, and Squaw Creek, with artifact assemblages suggesting that habitation of the sites by Penutian-speaking Wintu occurred about 1,000 years ago. Later work at nearby Squaw Creek suggested occupation of the area began about 6,500 years ago (Sundahl 1982, 1992). Cultural constituents from this early time period suggest cultural affiliation with the Borax Lake area, and the artifact assemblages suggest that Hokan-speaking peoples inhabited these sites (Jensen 1998b). In Secret Valley, east of the project area, Riddell (1960) uncovered materials at the Karlo Site representing 4,000 years of occupation, and at Lake Britton, 27 sites were excavated representing 5,000 years of occupation. More recent work in Northern California at Clear Lake near Borax Lake provides clear evidence that the area was first colonized at the end of the Pleistocene and associated with the "Western Clovis Tradition" (Willig and Aikens 1988), dating around 13,500 years ago (Fiedel 1999, 2000). Obsidian data collected by White in this same area indicates use of the area may have begun as early as 16,000-20,000 years ago, although White's findings have not been absolutely confirmed (White et al. 2002:448-449).

Locally, only two prehistoric village sites have been recorded (CA-SHA-467 and -468). Both sites, described as small shell middens, are located near the confluence of Burney Creek and the Pit River (Jensen 1979). Also, a number of lithic scatters and isolated artifacts have been found in the vicinity of Burney.

Historic

The first known recorded historic use of northeastern Shasta County by European-Americans occurred in the late 1820s when the trapping expeditions of the Hudson Bay Company plotted their north-south trail through the Fall River area. This route followed the Pit River to Hat Creek, then on to Cow Creek and the Sacramento River. John Work, Ewing Young, and Michael La Framboise all utilized this route in the 1830s. John C. Fremont named the vicinity "Fall River Valley" when he traveled through the area in 1846 (Petersen 1965).

European-American settlement of the Fall River Valley and Burney Valley began in 1855, relatively late, and at a much slower pace as compared to other parts of Shasta County where mineral deposits were intensively mined beginning in the early 1850s. This slow development was the result of geographic isolation, no mineable resources, a strong Indian presence, and the difficulty of shipping goods out of the area. During 1855, the first lumber mill began operations atop the upper falls of Fall River, and Sam Lockhart directed the development of a route between Red Bluff and Yreka (Petersen 1965). The road opened in 1856, and included a ferry crossing at the Pit River just below the mouth of Fall River. European-American settlement, road/trail development, logging, and trapping/hunting interrupted land use patterns of the Pit River Indians (Achumawi and Atsugewi) of the area, and various Pit River warriors responded by murdering European-Americans and taking supplies. In 1857, Fort Crook was established in the area. This military installation and various vigilante groups responded to Pit River Indian attacks by killing groups of peaceful Pit River Indians. By 1859, any surviving Indians were relegated to reservations and/or rancherias (Petersen 1965; Smith 1999).

Samuel Burney (trapper, guide, and caretaker) was one of the first settlers to arrive in Burney Valley in November 1858. Four months later, Indians killed him in his log cabin. In 1871, Ballard's Toll Road, also known as Winter's Toll Road, was built down the Pit River Canyon to Burney Valley, where it then continued to Millville. Burney Valley Post Office was established in 1872, and the town contained two general merchandise stores, a hotel, and a blacksmith shop. Burney Valley polled 43 voters in the elections of 1880. By 1888, Lewis Brewster arrived to his 160-acre homestead and became the first Constable of Burney Valley. In 1894, the town was renamed Burney. Although economic growth occurred in areas surrounding Burney due to hydroelectric development during the early 1900s, very little population growth/economic output occurred in Burney during the first 30 years of the twentieth century. Only about 50 people inhabited Burney in 1920 (Petersen 1965; Smith 1999).

During the early 1930s, Burney's population began to increase rapidly as a result of the completion of the modern highway connecting Burney to Redding and various hydroelectric facilities in the region. The highway and power made it economically feasible and efficient to produce and export goods (lumber and cattle) out of the Burney and Fall River valleys, and to provide goods and services to tourists and recreation-seekers flowing into the area. In 1936, Carl Phelps began the Burney Lumber Company, and Scott Lumber completed their mill near Burney in 1940. Burney's population tripled between 1920 and 1950. During the 1950s, Burney was the fastest growing area of eastern Shasta County. Lumber production increased with the addition of the Lorenz Lumber and the C & P Lumber Companies in the region, expansion of the existing Scott Plant, and the completion of a railroad track between Burney and McCloud. By the 1960s, the population of Burney was about 3,350 persons (Petersen 1965; Smith 1999).

Round Mountain

Environment

The project site on Round Mountain occurs in a mixed coniferous forest, and is situated between approximately 2,600 and 3,400 feet in elevation above sea level. The canopy layer consists of California black oak, canyon live oak, big-leaf maple, incense cedar, white fir, ponderosa pine, and Douglas-fir. The shrub layer includes deerbrush, California buckeye, green-leaved manzanita, white-leaved manzanita, poison oak, and hoary coffeberry. The herbaceous layer is composed of bracken fern, sword fern, Klamathweed, and an assortment of other wildflowers and grasses (ENPLAN 2009).

Historic land uses in the project vicinity consisted primarily of copper mining, agriculture, and timber harvesting. Recent land use is limited to the leveling of the site for development of the four existing telecommunication facilities. The proposed tower, access road, and power line corridor are all in areas previously disturbed for the construction of the existing telecommunication facilities.

Ethnographic

At the time of European-American contact (1830-1840), the project area appears to have been inhabited by the northern Yana. The northern Yana were located between the ethnographic boundaries of the Wintu (Penutian) and the Achumawi (Palaihnihan Hokan). In general, the Yana inhabited the upper Sacramento River Valley foothills and mountains east of the river (Johnson 1978). The following descriptions are derived primarily from the summary work of Johnson (1978) and Baumhoff (1957), unless otherwise indicated.

The Yana belong to the family of Hokan speakers, a linguistic stock whose members are found sporadically from California to Central America. Based upon geographic and linguistic differences, four divisions of Yana are recognized including the northern, central, southern, and Yahi Yana. Much of what is known of the northern Yana is inferred through studies of Ishi—a Yahi Yana, or gathered from informants of surrounding tribes who were usually not on good terms with the Yana.

The Yana practiced a semi-sedentary subsistence/settlement pattern. Main villages consisting of earth-covered, multi-family dwellings, assembly houses, and/or conical bark house were occupied during all months except summer, at which time the Yana migrated to elevations above 2,500 feet in order to find food and escape the heat (Johnson 1978; Baumhoff 1957). Most of the main villages were located along a narrow strip of land ranging between 1,000 and 2,000 feet above sea level (Sapir and Spier 1943). Throughout the year, various ecological zones were exploited at the peak of their output. The main staples of the Yana diet included acorns, deer, and fish. Acorns (the most important food source for the Yana) were gathered in late

September and October. During good years the supply would last until the next harvest (Johnson 1978; Baumhoff 1957).

Textiles such as basketry, cords, ropes, and nets required a variety of plant materials including hazel, willow, pine roots, sedge, milkweed fiber, Indian hemp, and bark. Clothing was made from buck, elk, and deer skin, in addition to bark and tules. Blankets were made from skins of rabbit, deer, wild cat, coyote and bear. Mahogany, juniper, hazel, and yew were utilized in bow production, oak was used for digging sticks, and a variety of other woods were utilized for arrow shafts and fire drills. Projectile points were made from locally available basalt, in addition to obsidian and glass. Obsidian was acquired through trade (and local Tuscan sources), and glass was available post-European-American contact. Grinding tools such as hopper mortars, manos, metates, and pestles were used; bedrock mortars were apparently not used.

Prehistoric

The earliest systematic archaeological investigations in northern California were conducted during the 1930s and 1940s and were associated with the construction of Shasta Dam. Smith and Weymouth (1952) recorded a large number of prehistoric midden sites along the Sacramento, Pit and McCloud Rivers, and Squaw Creek, with artifact assemblages suggesting that habitation of the sites by the Penutian-speaking Wintu occurred by about 1,000 years ago. Later work at nearby Squaw Creek suggested occupation of the area began about 6,500 years ago (Sundahl 1992). Cultural constituents from this early time period suggest cultural affiliation with the Borax Lake area, and the artifact assemblages suggest that Hokan-speaking peoples inhabited these sites.

In northeastern California, Riddell (1960) uncovered materials representing 4,000 years of occupation at the Karlo Site in Secret Valley, and at Lake Britton, 27 sites were excavated representing 5,000 years of occupation. More recent work in northern California at Clear Lake near Borax Lake provides clear evidence that the region was first colonized at the end of the Pleistocene and associated with the "Western Clovis Tradition" (Willig and Aikens 1988), dating around 13,500 years ago (Fiedel 1999, 2000). Obsidian data collected by White in this same area indicates use of the area may have begun as early as 16,000-20,000 years ago, although White's ascertains have not been absolutely confirmed (White et al. 2002:448-449).

Archaeological work in this portion of northern California has resulted in a complex, and somewhat inconsistent, local and regional archaeological record consisting of various temporal/cultural sequences. Perhaps the best supported sequence for the region is that proposed by Sundahl (1992), who recognizes four chronological sequences, each corresponding to a specific temporal interval: Borax Lake Pattern (ca. 8000-5000 BP), Squaw Creek Pattern (ca. 5000-3000 BP), Whiskeytown Pattern (ca. 4000-1700 BP), and the Augustine Pattern/Shasta Complex, which includes the Tehama Pattern (ca. Post-1700 BP).

Very few surveys and even fewer archaeological excavations have been conducted in this portion of northern California. As a result, no chronological/typological sequences focusing on the northern Yana have been hypothesized and tested.

Historic

The first known recorded historic use of northeastern Shasta County by European-Americans occurred in the late 1820s when the trapping expeditions of the Hudson Bay Company plotted their north-south trail through the Fall River area. This route followed the Pit River to Hat Creek, then on to Cow Creek and the Sacramento River. John Work, Ewing Young, and Michael La Framboise all utilized this route in the 1830s. John C. Fremont named the vicinity "Fall River Valley" when he traveled through the area in 1846 (Petersen 1965).

The settlement of Government Trading Post (later named Buzzard Roost and Bullskin) was established in 1869 along the banks of Cedar Creek near what is present day Round Mountain (Smith 1999). The earliest roads in the area were Oak Run Road and Reid's Toll Road. Oak Run Road (later named Buzzard Roost Road) was a freight road built in the 1850s. This road connected Yreka, Burney Valley, and Fall River Valley, and was utilized by settlers on their way to Oregon. Reid's Toll Road was built in 1875 in order to connect Redding to Buzzard Roost; it followed much of the same route as present-day Highway 299 East (Hildebrandt and Vaughan 2004).

The Round Mountain post office, the first in the area, was established in George Jackson's store at the foot of Bullskin Ridge in 1872 (Smith 1999) and was serviced by the Culverhouse stage lines that ran from Redding to Lakeview, Oregon (Colby 1982). Copper was the primary mineral to be mined and lumber was the primary agricultural good to be harvested from northeastern Shasta County as early as 1875 when the Furnaceville district (named for the blast furnaces used by the Copper Hill Group of mines) was established. It became a lively mining place and continued as the center of mining activities up to the turn of the century. The settlement of Buzzard Roost was completely destroyed by a forest fire in 1926.

The following description is from Petersen (1965):
Farming, stockraising, mining, and lumber have all played a part in the development of this small mountain community (Round Mountain) located near Montgomery creek on Highway 299 East. Together with Ingot, Round Mountain was called the Furnaceville district in the period of copper production in Shasta County History.

A county descriptive circular published in 1882 asserted that in the Round Mountain area: "There are good fruit, hay, and grain ranches." The California *Illustrated*, a guidebook for travelers, commented in 1891 that: "The Shasta Lumber Company has their headquarters at church, school, general merchandise store, saloon, and hotel. By the end of the 1960s a new school, post office, and store, as well as a large Pacific Gas and Electric substation, evidenced the validity of this mountain community.

During the early 1930s, northeastern Shasta County population began to increase rapidly as a result of the completion of the modern highway connecting Burney (located about 20 miles north of Round Mountain) to Redding, and various hydroelectric facilities in the region (Petersen 1965). However, no power was delivered to Round Mountain until 1945 (Smith 1999). The highway made it economically feasible and efficient to produce and export goods (lumber and cattle) out of the Round Mountain, Burney, and Fall River valleys, and to provide goods and services to tourists and recreation-seekers flowing into the area. During the 1950s, Burney was the fastest growing area of eastern Shasta County (Petersen 1965; Smith 1999).

With the introduction of electricity to Round Mountain in 1945 and the end of World War II, Round Mountain experienced the same population increases and output of lumber and other agricultural goods that took place throughout the region.

Bear Mountain
Environmental
The project site on Bear Mountain occurs in a mixed coniferous forest, and is situated between approximately 1,100 and 2,600 feet in elevation above sea level. The canopy layer is composed predominantly of ponderosa pine, grey pine, Douglas-fir, canyon live oak, blue oak, California black oak, interior live oak, and big-leaf maple. Shrubs present include poison oak, snowberry, buckbrush, California buckeye, and deerbrush. The herbaceous layer is typically sparse, and includes various clovers, vetch, lupine, grasses, and many other species (ENPLAN 2009).

Current land uses in the project vicinity consist of rural housing and grazing/ranching. Portions of the proposed tower site were leveled for the construction of the current CDF fire lookout. The proposed power line route from the tower to the access road is relatively undisturbed. The remainder of the power line will be placed in the existing improved access road

Ethnographic
The project area lies within the ethnographical territory of the *dawpom* 'front-ground' (Stillwater) Wintu. The *dawpom* are one of nine geographically distinct Wintu groups (DuBois 1935:6-9, LaPena 1978:324; Kroeber 1925:351). Ethnographic accounts of the Wintu are derived from two primary references: DuBois (1935) and Kroeber (1925). The following descriptions are based on the summary work of LaPena (1978), unless otherwise indicated.

Wintu subsistence strategies can best be described as semi-sedentary. Base villages generally consisting of 20 to 150 people, inhabiting four to several dozen bark houses and/or semi-subterranean earthen lodges,

were occupied year-round (LaPena 1978:325). Temporary camps were established during food gathering seasons (spring, summer, fall) in the hills and higher elevation zones (LaPena 1978). During the gathering seasons, activities consisted of the collection of plant foods, fishing, and hunting. The main dietary staples were deer, acorns, and salmon, supplemented by a variety of other plant and animal resources; manzanita (plentiful in the Stillwater area) was used to make soup and cider (LaPena 1978:336-339).

The Wintu manufactured many utilitarian and trade goods. Some items the Wintu considered valuable included: bows and arrows; elk skin armor; clam disk money; dentalia; bear, elk and otter skins; quivers; woodpecker scalps; obsidian knives; and spears. Trade occurred regionally, as well as locally within and between Wintu villages. The Wintu secured their own obsidian at Glass Mountain, or through trade with the Shasta Indians to the north. The clam disk money utilized by the Wintu was obtained from the south. LaPena notes that the farther north clam disks moved the more valuable they became. The Stillwater Wintu also provided salt to the Native Americans to the north and west (LaPena 1978:336-339).

Prehistoric

Systematic archaeological investigations began in Shasta County during the 1930s and 1940s with the construction of Shasta Dam. Artifact assemblages from three sites recorded along the McCloud River by Smith and Weymouth (1952) were determined to be indicative of a continuous Wintu occupation believed to begin by 1,000 years ago. These assemblages have been referred to as the Redding Aspect of the Augustine Pattern, or the Shasta Complex. The Shasta Complex is characterized by a sedentary settlement/subsistence pattern with year-round emphasis on riverine resources (Meighan 1955).

Investigations by Shasta College (Clewett and Sundahl 1980, 1981, 1982; Sundahl 1986) along the Clikapudi drainage identified a number of sites containing four prehistoric assemblages (three preceding the Shasta Complex), the earliest dating back to circa 4,000 years before present (BP). The late prehistoric period artifact assemblages at these sites differed from those of the Shasta Complex and have been referred to as the Tehama Pattern (associated with earlier Yana occupation). The Tehama Pattern is characterized by a more transhumant settlement/subsistence pattern. Wintu occupation at these sites is believed to have begun circa 860 BP, and to have displaced the Yana from the area.

Additional archaeological investigations have been conducted in the Redding area and the Northern Sacramento Valley by Basgall and Hildebrandt (1989), Clewett (1977), Clewett and Sundahl (1983), Tyree (1992), and Tyree and Sundahl (2002). The results of their studies classify cultural remains into several different temporal/cultural taxonomic systems and suggest human occupation within Shasta County as early as 7,500-8,000 years ago.

Historic

Historic use within the region began during the late 1820s when the expeditions of Jedediah Strong Smith and Peter Skene Ogden entered the Sacramento Valley. In the early 1830s, Oregon fur trappers introduced malaria to the area and various epidemics caused the deaths of approximately 75 percent of the Native Americans in the Sacramento Valley (LaPena 1978:324). Direct and indirect actions of Euro-Americans all but decimated Wintu populations well into the twentieth century.

Shasta County's Euro-American population expanded as a result of the acquisition of the Rancho San Buenaventura land grant by Pierson B. Reading in 1846, gold and copper mining which began in 1849, the Homestead Act of 1862, the arrival of the Central Pacific Railroad in 1872, and the Central Valley Project of 1935.

In 1938, Shasta Dam construction, requiring some 19 million man-hours of labor, began. The dam project provided many jobs and relieved Shasta County from the Depression. As World War II began, local men left the area in order to join the war effort. However, many men from outside Shasta County were attracted to the area due to continuing construction, and towns such as Project City were created overnight to assist in housing the County's increased population. In the decade between 1930 and 1940, Shasta County grew from 13,927 to 28,800 people (Petersen 1972).

The project area contains little evidence of the intensive and wide-spread mining activities found in other parts of Shasta County (Jensen 1991). Taking this lack into account, as well as the dearth of Homestead Entry Patents and poor soil quality, early historic land uses within the study area probably consisted of grazing and ranching.

Regulatory Setting

Federal

Because the proposed project is not subject to federal permits or approvals, there are no applicable federal regulatory programs that relate to impacts to cultural resources.

State

Senate Bill 18 Consultation

Senate Bill 18 requires cities and counties to contact, and consult with, California Native American Tribes (as defined by the Native American Heritage Commission, before adopting or amending a General Plan, or when designating land as open space, for the purpose of protecting Native American cultural places. The purpose of the Senate Bill is to establish meaningful consultation between tribal governments and local governments at the earliest possible point in the planning process. (State of California, 2004a)

Local

Shasta County General Plan

The following *Shasta County General Plan* objective is applicable to the proposed project:

HER-1 Protection of significant prehistoric and historic cultural resources.

There are no applicable *Shasta County General Plan* policies for a project of this nature.

Discussion

a. While no historical resources were encountered during the pedestrian surveys, there is a very limited possibility that subsurface historical resources may be found in the course of the proposed construction work. Implementation of Mitigation Measure V.1 would ensure that subsurface historical resources are not adversely affected. Following implementation of MM V.1, impacts related to historical resources would be less than significant.

b. While no archaeological resources were encountered during the pedestrian surveys, there is a very limited possibility that subsurface archaeological resources may be found in the course of the proposed construction work. Implementation of Mitigation Measure V.1 would ensure that subsurface archaeological resources are not adversely affected. Following implementation of MM V.1, impacts related to archaeological resources would be less than significant.

c. There is no record of paleontological resources on the project sites. The project sites have no unique geological features or fossil-bearing strata. Therefore, there would be no significant impact to unique paleontological resources, sites, or unique geologic features.

d. The project sites do not contain any identified cemeteries, burial sites, or human remains. However, there is a limited possibility that undiscovered human remains may be found in the course of the proposed construction work. Implementation of Mitigation Measure V.1 would ensure that subsurface human remains are not adversely affected. Following implementation of MM V.1, impacts related to human remains would be less than significant.

Documentation

Cultural Resources Inventory for the Proposed Indian Springs Telecommunications Project, Shasta County, CA, ENPLAN. 2009.

State of California. 2004a. Office of Planning and Research. *Senate Bill 18.*

Mitigation

MITIGATION MEASURE V.1: If any cultural resources (i.e., human bone or burnt animal bone, midden soils, projectile points, humanly-modified lithics, historic artifacts, etc.) are encountered during any phase of construction, all earth-disturbing work shall stop within 100 feet of the find until a qualified archaeologist and/or the County Coroner can make an assessment of the discovery and recommend/implement mitigation measures as necessary. Treatment of any human remains shall be in accordance with California Health and Safety Code 7050.5 and Public Resources Code 5097.98.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY and SOILS. Would the proposal:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❑	❑	X	❑
(2) Strong seismic ground-shaking?	❑	❑	X	❑
(3) Seismic-related ground failure, including liquefaction?	❑	❑	X	❑
(4) Landslides?	❑	❑	X	❑
b. Result in substantial soil erosion or the loss of topsoil?	❑	❑	X	❑
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	❑	❑	X	❑
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❑	❑	X	❑
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	❑	❑	❑	X

Environmental Setting

Regional Geology

The project area is located in the Cascade Range geologic/geomorphic province of California. The Cascade Range province extends from the northern end of the Sierra Nevada north to the Canadian border.

The Cascade Range province consists of a north-northwest-trending, relatively linear belt of active and dormant strata and shield volcanoes. The regional geologic conditions are dominated by andesitic, rhyolitic, and basaltic volcanic rocks mantled with surficial deposits consisting of pyroclastic rocks, lahar deposits, alluvium, and local lacustrine sediments. In the project region, the geology is dominated by volcanic rocks and sediments derived from Mt. Yana and Mt. Maidu of the ancient Cascade Range.

Project Area Soils

Soils present within the project area are described in Table 4.6.1.

Table VI.1. Project Area Soils

Project Area	Map Unit Symbol	Soil Name	Permeability	Slope (%)	Erosion Potential	Runoff Rate
Hatchet Mountain	CA604 266	Obie-Mounthat complex	Rapid	5-15	None-slight	Slow
Round Mountain	CA607 LkF	Lyonsville-Jiggs	Rapid	50-70	Moderate	Medium
	CA707 LkFsh	Lyonsville-Jiggs	Rapid	50-70	Moderate	Medium
Bear Mountain	CA607 RxF	Rockland	N/A	N/A	N/A	N/A
	CA707 195	Millsholm	Rapid	20-60	High	Rapid
	CA707 120	Holland family, deep-Holland family	Rapid	40-60	High	Very Rapid
	CA707 RxFsh	Rockland	N/A	N/A	N/A	N/A

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to impacts to geology and soils.

State

California Building Standards Code

The County has adopted the California Building Standards Code (1994) (based on the Uniform Building Code), which establishes building requirements for all new structures. Therefore, the California Building Standards Code regulates the construction of structures associated with the proposed project. The project is located in Seismic Zone 3, as defined by the California Building Standards Code, which is defined as an area subject to potential damage from earthquakes corresponding to intensity VII and higher on the Modified Mercalli Intensity Scale. Such areas are subject to strict building regulations designed to enhance the ability of a structure to withstand potential earthquakes.

General Permit for Storm Water Discharges Associated with Construction Activity: 99-08-DWQ

The State of California Water Resources Control Board (SWRCB) requires that dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activity. The proposed work at Bear and Round Mountains would disturb over one acre of soil; therefore, the project applicant would be required to obtain coverage under the Construction General Permit. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify Best Management Practices (BMPs) to be used by the discharger to protect storm water runoff, as well as the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program and a chemical monitoring program for "non-visible" pollutants, to be implemented if there is a failure of BMPs.

The SWRCB has drafted a new General Construction Permit, which is currently under consideration for approval. The new permit will substantially change the development and implementation requirements of a SWPPP. The project applicant may be subject to the new requirements depending upon the timing of permit approval and when project development begins.

Local

Shasta County Grading Ordinance

The Shasta County Grading Ordinance, included in the *Shasta County Zoning Plan* (Shasta County, 2003) sets forth regulations concerning grading, excavating, and filling. The Shasta County Grading Ordinance prohibits any grading of more than 250 cubic yards or 10,000 square feet of disturbance area without a grading permit from the County. The grading permit must include an approved grading plan provided by the project applicant, and it must set forth terms and conditions of grading operations that conform to the County's grading standards. The permit also requires the project applicant to provide a permanent erosion control plan that must be implemented upon completion of the project. Ongoing maintenance of erosion control measures

is required for the duration of the project and for three years after completion of the project, unless the project is released earlier by the enforcing officer designated by the County Board of Supervisors.

Shasta County General Plan
There are no applicable *Shasta County General Plan* policies or objectives for a project of this nature.

Discussion

a. The project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

(1) Rupture of a known earthquake, fault;

According to the Alquist-Priolo Earthquake Fault Zoning Maps for Shasta County, there is no known earthquake fault in the project area.

(2), (3), (4) Strong seismic ground shaking; Seismic-related ground failure, including liquefaction; Landslides;

According to the Shasta County General Plan, Section 5.1, Shasta County has a low level of historic seismic activity. As is all of Shasta County, the project area is located in Uniform Building Code Zone 3, described as an area of "moderate seismicity."

All facilities would be constructed according to the seismic requirements of the currently adopted Uniform Building Code, which would ensure that the hazard due to seismic ground-shaking is insignificant.

b. The project would result in grading (cut and fill) in order to facilitate project construction. Some grading encroachment may occur on slopes in excess of 30 percent. This may result in the displacement and overcovering of soil and a change in topographic features. The greatest concern raised by the extent of the proposed grading is the potential for soil erosion and subsequent sedimentation of drainages in the vicinity. Careful application of Best Management Practices (BMPs) during construction would minimize soil erosion and related water quality impacts.

The proposed project would be subject to certain erosion-control requirements mandated by existing County and State regulations. These requirements include:

- *Shasta County Grading Permit*. A grading permit is required prior to any grading activities. The grading permit includes requirements for erosion and sediment control, including retention of topsoil.
- *California Regional Water Quality Control Board "Construction Activity Storm Water Permit."* This permit overlaps with the County's Grading Ordinance provision by applying State standards for erosion-control measures during construction of the project. This permit also includes a requirement for implementation of a Storm Water Pollution Prevention Plan (SWPPP), which emphasizes storm water best management practices. The objectives of the SWPPP are to identify the sources of sediment and other pollutants that affect the quality of storm water discharges and to describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges.

Considering the extent of the proposed grading, the erosion characteristics of the soils, and proximity to natural drainages, impacts associated with erosion are considered potentially significant if no mitigation is applied. However, existing County and State regulations call for application of specific measures to reduce the potential for erosion. Compliance with the standard construction measures required through existing regulations would reduce project-related impacts to geology and soils to a less than significant level. No additional mitigation measures are warranted.

c, d. The project site is not located in an area likely to be affected by liquefaction and/or lateral spreading, or in an area likely to contain highly expansive soils. Expansive soils are characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Changes in soil moisture could result from rainfall, landscape irrigation, utility leakage, roof drainage,

and/or perched groundwater, and would trigger shrink/swell cycles in the soil. Potential impacts associated with shrink/swell cycles include unacceptable settlement or heave of structures, concrete slabs supported-on-grade, and pavements. Most of Shasta County is characterized by moderately expansive soils. These expansive soils generally contain clays that expand when moisture is absorbed into the crystal structure. This results in a rise in the ground surface. Though expansive soils are not considered to pose a significant hazard within Shasta County, the effects of potentially expansive soils on structures can be reduced through proper engineering design and standard corrective measures (Shasta County General Plan). Construction in conformance with California Building Standards Code and Uniform Building Code Standards adopted by Shasta County will ensure that the potential for impacts related to soil expansivity are reduced to a less-than-significant level.

e. The project does not involve the use of septic tanks or alternative wastewater disposal. There would be no impact.

Documentation

Shasta County General Plan, Section 5.1 Seismic and Geologic Hazards, Section 6.1 Agricultural Lands, and Section 6.3 Minerals

County of Shasta, Erosion and Sediment Control Standards, Design Manual

Soil Survey of Shasta County Area, California, published by U.S. Department of Agriculture, Soil Conservation Service and Forest Service, August 1974

California Division of Mines and Geology. 1994. *Fault Activity Map of California and Adjacent Areas*.

Mitigation

Compliance with the standard construction measures included in this section will reduce any project-related impacts to geology and soils to a less than significant level.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS. Would the proposal:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	❑	❑	X	❑
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❑	❑	X	❑
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❑	❑	❑	X
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	❑	❑	❑	X
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	❑	❑	❑	X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❑	❑	❑	X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❑	❑	❑	X
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❑	❑	❑	X

Environmental Setting

A hazardous material records search was conducted by ENPLAN in August 2009. Sources consulted include the Regional Water Quality Control Board, Integrated Waste Management Board, Department of Toxic Substances Control, and U.S. Environmental Protection Agency.

No Solid Waste Information System, Solid Waste Assessment Test, Superfund, or Emergency Response Notification System sites were identified within a 1,000-foot radius of the project sites. No existing Underground Storage Tanks were identified within a 1,000-foot radius of the project sites, and the sites are not on any of the reviewed regulatory agency lists of existing hazardous materials releases.

Regulatory Setting

Federal and State

Federal and State regulations described in this summary pertain primarily to construction activities.

Hazardous Materials Management
Federal and state laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed, and in the event that such materials are accidentally released, to prevent or mitigate injury to health and the environment. The Federal Emergency Planning and Community Right to Know Act (EPCRA) of 1986 imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories. A Business Plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, the California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. These local agencies administer the laws and regulations.

Storage of hazardous materials in underground tanks is regulated by the State Water Resources Control Board (SWRCB), which has overall responsibility for implementing all regulations set forth in Title 23 of the California Code of Regulations (CCR). State standards cover installation and monitoring of new tanks, monitoring of existing tanks, and corrective actions for removed tanks. Implementation of state underground storage tank regulations, including permitting for all hazardous materials storage, is enforced locally by the Shasta County Environmental Health Division. Aboveground storage tanks are regulated by the California Environmental Protection Agency, and are covered under a facility's Hazardous Materials Business Plan.

Worker Safety
The California Occupational Safety and Health Administration (Cal-OSHA) and the Federal Occupational Safety and Health Administration (Fed-OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Pursuant to the Occupational Safety and Health Act of 1970, Fed-OSHA has adopted numerous regulations pertaining to worker safety, contained in the Code of Federal Regulations Title 29 (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling.

Cal-OSHA assumes primary responsibility for developing and enforcing state workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal-OSHA standards are generally more stringent than federal regulations. Cal-OSHA regulations concerning the use of hazardous materials in the workplace, as detailed in CCR Title 8, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

Emergency Response to Hazardous Materials Incidents
California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this Plan. The Plan is administered by the state Office of Emergency Services (OES), which coordinates the responses of other State agencies.

Hazardous Materials Transport
The U.S. Department of Transportation regulates hazardous materials transportation between states. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of

Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads.

Hazardous Waste Management
The California Department of Toxic Substances Control regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the Federal Resource Conservation and Recovery Act and the State Hazardous Waste Control Law. Both laws impose comprehensive regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

California Public Resources Code 4291
California Public Resources Code 4291 requires property owners in wildland areas and along wildand-urban interfaces to create 100 feet (or to the property line, whichever is closest) of defensible space, for fire protection, around their homes and buildings in the following manner: (1) by removing all flammable vegetation within 30 feet immediately surrounding a structure, and (2) by creating a fuel reduction zone in the remaining 70 feet by focusing on removing lower level vegetation components (i.e., shrub layer) and removing lower tree branches at least six feet from the ground.

Local
Shasta County Environmental Health Division
The Shasta County Environmental Health Division may respond to incidents involving any release or threatened release of hazardous materials. Threats to people, property and the environment are assessed, and then remedial action procedures are conducted under the supervision of Division staff or another agency. As part of this service, the Shasta County Environmental Health Division responds to requests for assistance from the Shasta County Hazardous Materials Response Team in identifying unknown materials.

Shasta County Fire Safety Standards
The Shasta County Fire Safety Standards (2005), administered by the County Fire Warden, include standards applicable to new development in Shasta County. The standards include requirements with regard to road and driveway design (including emergency fire escape roads), street signs, building numbering, fire protection water standards, hydrant spacing, building construction standards, vegetation clearing, and aboveground storage tanks.

Shasta County General Plan
The following *Shasta County General Plan* objective is applicable to the proposed project:

HM-1 Protection of life and property from contact with hazardous materials through site design and land use regulations and storage and transportation standards.

The following *Shasta County General Plan* policy is applicable to the proposed project:

FS-b Known fire hazard information should be reported as part of every General Plan amendment, zone change, use permit, variance, building site approval, and all other land development applications subject to the requirements of the California Environmental Quality Act (CEQA).

Discussion

a, b, c, d. The nature of the project as installation of telecommunication towers and underground powerlines does not present a significant risk related to hazardous materials or emissions. There are no documented hazardous material releases located on or near the project sites, and the project sites are not located in the vicinity of schools. There would be a less-than-significant impact.

e, f. There are no public or private airstrips in the vicinity of the project sites. There would be no impact.

g. The project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area. There would be no impact.

h. Many locations within Shasta County, including the project area, are identified as having a “high” to “very high” wildland fire hazard potential, due to an intermixture of urban/rural uses and natural areas with high fuel loads and varied terrain. While there may be a minor increase in fire danger due to construction activities, there will be no long-term increase with regard to wildland fire impacts.

Documentation

Underground Storage Tanks, Shasta County Department of Environmental Health, 2009

Leaking Underground Storage Tanks, Regional Water Quality Control Board, 2009

Hazardous Materials Search, U.S. Environmental Protection Agency website, 2009

CalSites, Department of Toxic Substance Control, 2009

Shasta County General Plan, Section 5.4 Fire Safety and Sheriff Protection, and Section 5.6 Hazardous Materials

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY. Would the proposal				
a. Violate any water quality standards or waste-discharge requirements?	❑	❑	X	❑
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❑	❑	❑	X
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	❑	❑	X	❑
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	❑	❑	X	❑
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	❑	❑	X	❑
f. Otherwise substantially degrade water quality?	❑	❑	X	❑
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❑	❑	❑	X
h. Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?	❑	❑	❑	X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❑	❑	❑	X
j. Inundation by seiche, tsunami, or mudflow?	❑	❑	X	❑

Environmental Setting

The project area is located primarily on mountaintops and along existing road and powerline rights-of-way. There are no streams, lakes, ponds, or other water bodies in or adjacent to the project areas.

Regulatory Setting

Federal

U.S. EPA

The U.S. EPA (Region 9) is responsible for administering the federal Clean Water Act. Generally, the EPA does not get directly involved in project-level water quality protection unless the state does not comply with the Clean Water Act.

In an effort to reduce non-point source pollutants into surface waters of the United States, Congress amended Section 402 (p) of the Clean Water Act in 1987 to require National Pollutant Discharge Elimination System (NPDES) permits for certain storm water discharge sources. In California, regulation of these storm water discharge sources was delegated to the Regional Water Quality Control Board (RWQCB).

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. The SDWA authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water.

The U.S. EPA, states, and water systems then work together to make sure that these standards are met.

Federal Emergency Management Agency (FEMA)

Shasta County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by Federal Emergency Management Agency (FEMA). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that buildings and related structures should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

State

Central Valley Regional Water Quality Control Board

The Central Valley Regional Water Quality Control Board (RWQCB) is an agency within the Cal-EPA, under the authority of the SWRCB, and regulates surface water and groundwater quality in the Central Valley region. The RWQCB's jurisdiction includes all tributary streams and rivers, ocean waters, and groundwaters located within the Central Valley region. The RWQCB's primary policy document for the management of water quality is the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, last updated in 2007. The goal of the Plan is to provide a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the Central Valley Region. Projects involving disturbance (i.e., clearing, grading, and excavation) of one or more acre are required to comply with the provisions of the statewide General Construction Activity Storm Water Permit (SWP) that identifies potential sources of pollution and provides best management practices (BMPs) to reduce stormwater-related pollutant discharges into surface waters. Water quality at the project site is primarily regulated by the Central Valley RWQCB.

California Safe Drinking Water Act

The California Safe Drinking Water Act (CA SDWA) was passed to build on and strengthen the federal Safe Drinking Water Act (SDWA). The CA SDWA authorizes the state's Department of Health Services (DHS) to protect the public from contaminants in drinking water by establishing maximum contaminant levels (MCLs) that are at least as stringent as those developed by the U.S. EPA, as required by the federal SDWA. The California DHS lists any contaminants that may have any adverse health effects, based on expert opinion, and may occur in public water systems, including all the substances for which federal MCLs exist.

Local

Shasta County

Shasta County administers policies to prevent water quality degradation in the County. The County requires projects involving grading and earthwork to adhere to *California Building Standards Code* Excavation and Grading requirements. The *California Building Standards Code* requires measures to prevent erosion,

flooding, or mudflows into adjacent public or private lands or watercourses; and protection of slopes from run-off during cut and fill activities. The *California Building Standards Code* also states that specific studies (liquefaction studies, soils engineering reports, etc.) may be requested by the local building officials.

Shasta County General Plan
There are no applicable *Shasta County General Plan* policies and/or objectives for a project of this nature.

Discussion

a, b. As discussed above, the project has the potential to temporarily degrade water quality due to increased erosion. Compliance with the standard construction measures included in Section VI: Geology and Soils will reduce any project-related impacts to water quality to a less than significant level. Given these measures, no significant impacts to water quality are expected as a result of project implementation.

The project would not use any surface or groundwater for its operation; therefore it would not affect groundwater quanitites.

c, d. Project implementation would result in a negligible increase in surface runoff. The amount of impervious surfaces to be added to the project areas would be limited to the size of the concrete pads at each of the mountaintops. Absorption rates and the rate and amount of surface water runoff are not expected to be significantly affected.

e. Because the project would involve covering of only minor amounts of permeable ground, it would not create or contribute significant additional runoff water.

f. Fuels and hazardous materials may be used within the project areas during project construction. Accidental spills of these substances could contaminate drainages, soils, wetlands, and other environmentally sensitive areas and water bodies. Compliance with existing requirements governing the transport, use and disposal of fuels and other hazardous materials that may be used during construction would reduce the potential for releases of such materials to an insignificant level; no mitigation measures are warranted.

g, h, i. Federal Emergency Management Agency (FEMA) flood maps indicate that the project site is in Zone "D," an area of undetermined flood hazards. However, the project would not involve the construction of housing, levees or dams; would not impede or redirect flood waters; would not expose people to flood hazards; and the project sites are not designated as being in a 100-year flood hazard areas; therefore, there is no impact.

j. The proposed project area is located within the interior of California where there is no threat of a tsunami. No surface water bodies likely to be affected by seiches are present in the project vicinity.

Standard County and State regulations related to erosion control would reduce any impacts related to mudflows to a less-than-significant level.

Documentation

Shasta County General Plan, Section 5.2 Flood Protection, Section 5.3 Dam Failure Inundation, and Section 6.6 Water Resources and Water Quality.

Flood Boundary and Floodway Maps and Flood Insurance Rate Maps for Shasta County prepared by the Federal Emergency Management Agency, as revised to date.

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING. Would the proposal:				
a. Physically divide an established community?	❑	❑	❑	X
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❑	❑	❑	X
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	❑	❑	❑	X
d. Have social or economic impacts resulting in physical deterioration of the environment (economic blight)?	❑	❑	❑	X

Environmental Setting

The Hatchet Mountain site is zoned as "TP (Timber Production)." The Round Mountain site (including the proposed new Round Mountain site access road and powerline corridor) are zoned as "TP (Timber Production)" and "TL (Timberland)." Both the Hatchet Mountain and Round Mountain sites are designated by the Shasta County General Plan as "Timberland." Both sites contain existing antennae fields.

The Bear Mountain site is zoned as "EA-AP Exclusive Agricultural – Agricultural Preserve" (tower site and electrical line corridor, including a portion of the electrical line corridor within the access road right-of-way) and "R-L Limited Residential" (electrical line corridor within the access road right-of-way), and is designated by the Shasta County General Plan as "Rural Residential B." The tower site is within a parcel that is a current Williamson Act contract. Construction of a telecommunication tower on the site will require Shasta County discretionary approval in the form of a special use permit.

In accordance with PEA requirements, GIS data (land owner contact data) for all parcels within 300' of the project areas is included in Appendix G.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to land use and planning impacts.

State

There are no applicable state regulatory programs that relate to land use and planning impacts.

Local

Shasta County General Plan

The following *Shasta County General Plan* policy is applicable to the proposed project:

PF-h Public uses (e.g. schools, parks, waste disposal sites) and public utilities (e.g. substation, transmission lines) whose site-specific locations often cannot be identified in advance by the General Plan may be permitted throughout the County to serve the public need. Appropriate zoning on site-specific locations will be determined in response to the identified need as it occurs.

There are no applicable *Shasta County General Plan* objectives for a project of this nature.

Discussion

a. The proposed project sites are located in a relatively undeveloped areas in northeastern Shasta County. Project implementation would not disrupt or divide an established community. There is no impact.

b. Project implementation would not conflict with applicable land use plans, policies or regulations. There is no impact.

c. There are no habitat conservation plans or natural community conservation plans that include the project corridor. There is no impact.

d. As the proposed project consists of construction of privately-owned telecommunication towers in relatively undeveloped areas, it will not have any adverse social or economic impacts. There is no impact.

Documentation

Shasta County General Plan, land use designation maps and zone district maps

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES. Would the proposal:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❑	❑	❑	X
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❑	❑	❑	X

Environmental Setting

A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the State Division of Mines and Geology as being a resource of regional significance, and is intended to help maintain any quarrying operations and protect them from encroachment of incompatible uses. The project area is not identified in the Shasta County General Plan or by the State Division of Mines and Geology as having any known mineral resource value.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to impacts to mineral resources.

State

California Surface Mining and Reclamation Act

The protection of regionally significant mineral resource deposits is one of the main emphases of the California Surface Mining and Reclamation Act (SMARA). The law specifically mandates a two-phased process, commonly referred to as classification and designation, for mineral resources. The California Geological Survey is responsible under SMARA for carrying out the classification phase of the process. The California Mining and Geology Board is responsible for the second phase, which allows the Board to designate areas within a production-consumption region that contain significant deposits of certain mineral resources that may be needed to meet the region's future demand.

SMARA requires the State Geologist to classify lands into Mineral Resource Zones (MRZ) based on the known or inferred mineral resource potential of that land. The classification process is based solely on geology, without regard to land use or ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of lands is recognized and considered in the land use planning process. The MRZ categories are described below:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates significant mineral deposits are present or where it is judged that a high likelihood exists for their presence.
- MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.

Local

Shasta County General Plan

There are no applicable *Shasta County General Plan* policies and/or objectives for a project of this nature.

Discussion

a, b. While the project sites are located on lands designated as MRZ-3, there are no known mineral resources on the project sites or in the vicinities, nor are the project sites designated or zoned for the extraction of mineral deposits. Therefore, there would be no impact.

Documentation

Shasta County General Plan, Section 6.3 Minerals

DMG Open File Report 97-03, California Department of Conservation, Division of Mines and Geology, 1997

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. NOISE. Would the proposal result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❑	❑	X	❑
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	❑	❑	❑	X
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	❑	X	❑
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	❑	X	❑
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	X

Environmental Setting

Fundamentals of Acoustics

Noise is often described as unwanted sound, and thus is a subjective reaction to the physical phenomenon of sound. Sound consists of variations in air pressure that the ear can detect. The ear responds to pressure changes over a range of 10^{14} to 1. This is roughly equivalent to the range of 1 second compared to 3.2 million years, or 1 square yard compared to the entire surface area of the earth. To deal with the extreme range of pressures that the ear can detect, researchers express the amount of acoustical energy of a sound by comparing the measured sound pressure to a reference pressure, then taking the logarithm (base 10) of the square of that number. This original unit of sound measurement, named the bel after Alexander Graham Bell, corresponds well to human hearing characteristics when it is divided by a factor of 10. The resulting unit, one tenth of a bel, is called the decibel, and is abbreviated as dB.

The threshold of hearing is considered to be zero (0) dB, and the range of sounds in normal human experience is 0 to 140 dB. Because sound pressure levels are defined as logarithmic numbers, the values cannot be directly added or subtracted. For example, two sound sources, each producing 50 dB, will produce 53 dB when combined, not 100 dB. This is because two sources have two times the energy of one source, and 10 times the logarithm of 2 equals 3. Similarly, ten sources produce a 10 dB higher sound pressure level than one source, as ten times the logarithm of 10 equals 10.

The ear responds to pressure variations in the air from about 20 times per second to about 20,000 times per second. The frequency of the variations is described in terms of hertz (Hz), formerly called cycles per second. The ear does not respond equally to all frequencies. For example, we do not hear very low frequency sounds as well as we hear higher frequency sounds, nor do we hear very high frequency sounds very well. This difference in perceived loudness varies with the sound pressure level of the sound. In general, the maximum sensitivity of the ear occurs at frequencies between about 500 and 8000 Hz.

To compensate for the fact that the ear is not as sensitive at some frequencies and sound pressure levels as at others, a number of frequency weighting scales have been developed. The "A" weighting scale is most commonly used for environmental noise assessment, as sound pressure levels measured using an A-weighting filter correlate well with community response to noise sources such as aircraft and traffic.

When an A-weighting filter is used to measure sound pressure levels, the results may be expressed as *sound levels*, in decibels (dB). It is sufficient to use the abbreviation “dB” if these terms are well defined, but many people prefer to use the expressions dBA or dB(A) for clarity. For convenience, many people use the term “noise level” interchangeably with “sound level.” Table XI.1 shows typical sound levels and relative loudness for various types of noise environments.

The ambient noise level is defined as the noise from all sources near and far, and refers to the noise levels that are present before a noise source being studied is introduced. A synonymous term is pre-project noise level. Noise exposure contours or noise contours are lines drawn about a noise source representing constant levels of noise exposure. CNEL or L_{dn} (DNL) contours are frequently utilized to graphically portray community noise exposure. The terms CNEL and L_{dn} (DNL) are defined in the following section.

Table XI.1
Examples of A-Weighted Sound Levels and Relative Loudness

Sound Source	Sound Level (dBA)	Relative Loudness (approximate)	Relative Sound Energy
Jet aircraft, 100 feet	130	128	10,000,000
Rock music with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobile at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

Source: U.S. Department of Housing and Urban Development, “Aircraft Noise Impact -- Planning Guidelines for Local Agencies,” 1972.

Environmental Noise Descriptors

Most environmental noise sources produce varying amounts of noise over time, so the measured sound levels also vary. For example, noise produced during a train passage will vary from relatively quiet background levels before the event to a maximum value when the train passes by, returning down to background levels as the train leaves the observer's vicinity. Similarly, noise from traffic varies with the number and types of vehicles, speed, and proximity to the observer.

Variations in sound levels may be addressed by statistical methods. The simplest of these are the maximum (L_{max}) and minimum (L_{min}) noise levels, which are the highest and lowest levels observed. To describe less extreme variations in sound levels, other statistical descriptors may be used, such as the L_{10}, L_{50}, and L_{90}. The L_{10} is the A-weighted sound level equaled or exceeded during 10 percent of a time period. Similarly, the L_{50} and L_{90} are the sound levels equaled or exceeded during 50 and 90 percent of a time period, respectively. The most common time period used with these statistical descriptors is one hour, although any time period can be used so long as it is stated. Because statistical descriptors such as L_{10}, L_{50}, etc. are sometimes cumbersome to calculate, the equivalent sound level (L_{eq}) or energy average sound level is often used to describe the “average” sound level during a stated time period, usually one hour.

The Day-Night Level (DNL or L_{dn}) is calculated from hourly L_{eq} values, after adding a "penalty" to the noise levels measured during the nighttime (10 p.m. to 7 a.m.) hours. The penalty for nighttime hours is a factor of 10, which is equivalent to 10 dB. The Community Noise Equivalent Level (CNEL) is similar to the DNL, except that an additional penalty of 5 dB is applied to noise events occurring during the evening hours of 7 p.m. to 10 p.m. In most situations, the CNEL value will be up to one dB higher than the DNL value.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to noise impacts.

State

There are no applicable state regulatory programs that relate to noise impacts.

Local

Shasta County General Plan

The following *Shasta County General Plan* objective is applicable to the proposed project:

N-1 To protect County residents from the harmful and annoying effects of exposure to excessive noise.

There are no applicable *Shasta County General Plan* policies for a project of this nature.

Discussion

a, d. The proposed project would not permanently increase ambient noise levels. However, there would be a temporary increase in daytime noise levels in the immediate project vicinity associated with project construction (heavy equipment use and construction traffic). Activities involved in construction would typically generate maximum noise levels ranging from 80 to 95 dBA at a distance of 50 feet. Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of distance. Construction noise levels at and near the project area would fluctuate, depending on the number and type of construction equipment operating at any given time. However, as there are no sensitive receptors located near the project sites, there would be no impact.

b. Construction activities would consist primarily of trenching, surface grading and leveling utilizing standard excavating equipment. Work would not involve the use of explosives, pile driving, or other intensive construction techniques that could generate significant groundborne noise or vibration.

c. In the long term, no significant noise-level increases are anticipated as a result of project implementation. Noise-generating activities would be limited to occasional maintenance work.

e, f. There are no public or private airstrips in the project vicinity. There would be no impact.

Documentation

Shasta County General Plan, Section 5.5 Noise

Mitigation

No mitigation is necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING. Would the proposal:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❑	❑	❑	X
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	X

Environmental Setting
There are no residences in the vicinity of the tower sites; however, there are two to three homes located along the access road to Bear Mountain.

Regulatory Setting
Federal
There are no applicable federal regulatory programs that relate to impacts to population and housing.

State
There are no applicable state regulatory programs that relate to impacts to population and housing.

Local
Shasta County General Plan
There are no applicable *Shasta County General Plan* policies or objectives for a project of this nature.

Discussion
a. The proposed project does not include any new residential or commercial development that would result in substantial population growth. Several temporary construction jobs would be generated, but these are expected to be filled by existing residents, and are not of sufficient duration to attract new residents to the area. There would be no impact.

b. Project implementation would not remove any existing housing. There would be no impact.

c. Project implementation would not remove any existing residences; therefore, no people would be displaced. There would be no impact.

Documentation
Shasta County General Plan, Section 7.1 Community Organization and Development Pattern

Shasta County General Plan, Section 7.3 Housing Element

Mitigation
None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. PUBLIC SERVICES.				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
(1) Fire protection?	❑	❑	❑	X
(2) Police protection?	❑	❑	❑	X
(3) Schools?	❑	❑	❑	X
(4) Parks?	❑	❑	❑	X
(5) Other public facilities?	❑	❑	❑	X

Environmental Setting
The proposed project would consist of adding telecommunication towers to existing antennae fields at Hatchet Mountain and Round Mountain, and constructing a new telecommunication tower near an existing fire lookout at Bear Mountain. Facilities of this nature would not typically generate a demand for public services.

Regulatory Setting
Federal

There are no applicable federal regulatory programs that relate to impacts to public services.

State
California Public Resources Code 4291
California Public Resources Code 4291 (California Department of Forestry and Fire Protection, 2005) requires property owners in wildland areas and along wildland-urban interfaces to create 100 feet of defensible space, for fire protection, around their homes and buildings in the following manner: (1) by removing all flammable vegetation within 30 feet immediately surrounding a structure, and (2) by creating a fuel reduction zone in the remaining 70 feet by focusing on removing lower level vegetation components (i.e., shrub layer) and removing lower tree branches at least six feet from the ground.

Local
Shasta County Fire Safety Standards
The Shasta County Fire Safety Standards (Shasta County, 2005), administered by the County Fire Warden, include standards applicable to new development in Shasta County. The standards include requirements with regard to road and driveway design (including emergency fire escape roads), street signs, building numbering, fire protection water standards, hydrant spacing, building construction standards, vegetation clearing, and aboveground storage tanks.

Shasta County General Plan
There are no applicable *Shasta County General Plan* policies and/or objectives for a project of this nature.

Discussion

a.(1), (2) The project is not intended for human occupancy, and would not substantially affect police or fire protection services. There would be a beneficial impact by increasing phone services in a currently unserved area. There would be no significant impact.

a.(3) The proposed project would not include the construction of any new housing units and would not result in any increase in the County's population or increased numbers of students served by local schools. There would be no impact.

a.(4) The proposed project would not require the provision or alteration of any recreational facilities or the need for new facilities. The project would not cause an increase in population, or result in a decrease in existing recreational opportunities. There would be no impact.

a.(5) Implementation of the proposed project is not expected to result in a significant impact on other public facilities.

Documentation

California Department of Forestry and Fire Protection (CalFire). 2005. *California Public Resources Code 4291.*

Shasta County General Plan, Section 7.5 Public Facilities

Shasta County. 2005. *Fire Safety Standards.*

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION. Would the proposal:				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❑	❑	❑	X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❑	❑	❑	X

Environmental Setting
The project does not include any recreational facilities, nor would construction of the project impact recreational facilities. The telecommunication towers would be privately owned and operated, and would not be available for public use.

Regulatory Setting
Federal
There are no applicable federal regulatory programs that relate to impacts to recreation.

State
There are no applicable state regulatory programs that relate to impacts to recreation.

Local
Shasta County General Plan
There are no applicable *Shasta County General Plan* policies aor objectives for a project of this nature.

Discussion
a. The proposed project area does not contain any parks or recreational facilities, nor would the project involve the construction of residences or otherwise directly or indirectly induce a demand for recreational opportunities. Therefore, neither construction nor operation of the project would affect recreational facilities or services.

b. The project does not include the construction of recreational facilities. There would be no impact.

Documentation
Shasta County General Plan, Section 6.9 Open Space and Recreation

Mitigation
None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. TRANSPORTATION AND CIRCULATION. Would the proposal:				
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	❑	❑	X	❑
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	❑	❑	X	❑
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❑	❑	❑	X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❑	❑	❑	X
e. Result in inadequate emergency access?	❑	❑	❑	X
f. Result in inadequate parking capacity?	❑	❑	❑	X
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	❑	❑	❑	X

Environmental Setting

The project sites are located in northeastern Shasta County. Bear Mountain and Round Mountain are accessible only via unpaved, gated, private access roads; the Hatchet Mountain site can be reached via a publicly accessible unpaved road.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to impacts to traffic and transportation.

State

There are no applicable state regulatory programs that relate to impacts to traffic and transportation.

Local

Regional Transportation Planning Agency (RTPA)

The Shasta County Regional Transportation Planning Agency (RTPA) is the agency responsible for transportation planning for the Shasta County region, including the three cities and the unincorporated area. The planning process is in compliance with the laws and guidelines developed by Caltrans and the Federal Department of Transportation. This responsibility includes development and adoption of transportation policy direction, review and coordination of transportation planning, preparation and endorsement of an Overall Work

Program (OWP), a Regional Transportation Plan (RTP), a Regional Transportation Improvement Plan (RTIP), and a Federal Transportation Improvement Plan (FTIP). (RTPA, 2006)

Shasta County General Plan.
There are no applicable *Shasta County General Plan* policies or objectives for a project of this nature.

Discussion

a, b. The proposed project would not result in any long-term changes in traffic volume or circulation patterns. Minor increases in traffic volume and short interruptions of traffic flows could be experienced during construction; the impact would be less than significant.

c. The proposed project would not involve any aviation-related uses. There would be no impact.

d. The proposed project would not involve the construction of new public roadway facilities and would not increase hazards on area roadways due to incompatible uses. The proposed segment of new private road at Round Mountain would reduce existing hazards associated with the overly steep slope of the existing road segment. There would be no adverse impact.

e. The project would not result in inadequate emergency access. There would be no impact.

f. The project would not create the need for either on-site or off-site parking. There would be no impact.

g. There are no policies, plans, or programs supporting alternative transportation that apply to this project. There would be no impact.

Documentation

Shasta County General Plan, Section 7.4 Circulation

Shasta County Regional Transportation Planning Agency. 2006. *Shasta County Southern Region Transportation Planning Study.*

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS. Would the proposal:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❑	❑	❑	X
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	❑	❑	X
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	❑	X	❑
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❑	❑	❑	X
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❑	❑	❑	X
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❑	❑	X	❑
g. Comply with federal, state, and local statutes and regulations related to solid waste?	❑	❑	X	❑

Environmental Setting

The proposed project would consist of adding telecommunication towers to existing antennae fields at Hatchet Mountain and Round Mountain, and constructing a new telecommunication tower near an existing fire lookout at Bear Mountain. Work would include extension of powerlines to the Bear Mountain and Round Mountain tower sites. The project would not make use of any water or wastewater facilities.

Regulatory Setting

Federal

There are no applicable federal regulatory programs that relate to impacts to utilities and service systems.

State

There are no applicable state regulatory programs that relate to impacts to utilities and service systems.

Local

Shasta County General Plan

There are no applicable *Shasta County General Plan* policies or objectives for a project of this nature.

Discussion

a. The proposed project would not include any uses that generate wastewater. There would be no impact.

b. The project would not require or result in the construction or expansion of new or existing water- or wastewater-treatment facilities. There would be no impact.

c. Project implementation would result in a negligible increase in surface runoff, which would not warrant construction of storm drainage facilities.

d. The project would not use any surface or groundwater for its operation. There would be no impact.

e. The proposed project would not result in wastewater generation. There would be no impact.

f. Construction of the proposed project would result in a minimal amount of debris requiring disposal at a landfill. This one-time impact is not expected to significantly affect the capacity of local landfills. Impacts would be less than significant.

g. The proposed project would comply with all federal, state, and local statutes and regulations as they relate to solid waste. Once installation is complete, the proposed project would produce no solid wastes. There would be a less-than-significant impact.

Documentation

Shasta County General Plan, Section 7.5 Public Facilities

Mitigation

None necessary.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❑	X	❑	❑
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	❑	❑	X	❑
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❑	❑	X	❑

Discussion

a. As documented in the PEA, project implementation could result in disturbance of biological resources; possible disturbance of subsurface cultural resources; increased soil erosion and water quality degradation; and increased noise levels and air emissions during construction. Design features incorporated into the project would avoid or reduce to insignificant levels certain potential environmental impacts, as would compliance with required agency permits. The remaining impacts can be reduced to levels that are less than significant through implementation of the mitigation measures presented in this Initial Study.

b. Based on the discussion and findings in all Sections above,and considering the remote locations of the proposed facilities, there is no evidence to suggest that the project would have impacts that are cumulatively considerable.

c. As discussed herein, the project does not have characteristics which could cause substantial adverse effects on human beings, either directly or indirectly.

Chapter 6: Detailed Discussion of Significant Impacts

6.1 Mitigation Measures Proposed to Minimize Significant Effects

MITIGATION MEASURE III.1: Particulate matter emissions shall be controlled by implementing standard construction dust control measures, including but not limited to the following:

- Minimizing soil disturbance.
- Regularly watering disturbed areas, including on-site vehicle/equipment travel routes and soil stockpiles. Watering should be sufficient to prevent airborne dust from leaving the site.
- Curtailing earth-moving activities on windy days.
- Ensuring that the engines of all construction equipment are properly tuned.
- Limiting the maximum speed to 15 miles per hour on unpaved roads.
- Replanting vegetation in disturbed areas as quickly as possible.
- Implementing other effective particulate matter control measures, as needed.

MITIGATION MEASURE III.2: Greenhouse gas emissions generated during project construction shall be minimized by implementing the following:

- Using ARB-certified diesel construction equipment.
- Using alternative fuel types for construction equipment, such as biodiesel.
- Using local building materials.
- Limiting construction vehicle idling time.

MITIGATION MEASURE IV.1: Loss of northern clarkia at the Round Mountain site shall be minimized through implementation of the following measures:

- A qualified botanist shall flag and map the extent of northern clarkia populations in and adjacent to the study area; such work shall be conducted during the plant's blooming period (late June-July) and prior to initiation of construction.
- Under supervision of the qualified botanist, and in consultation with the construction project manager, temporary construction fencing shall be installed to protect the northern clarkia to the maximum extent feasible. The fencing shall be maintained throughout the duration of project construction.
- Stockpiling of materials and equipment shall not be allowed within the population boundary.
- Minor adjustments to the proposed powerline route shall be made to minimize disturbance of northern clarkia; where full avoidance is not feasible, the width of construction disturbance shall be minimized.

MITIGATION MEASURE IV.2: To ensure that active nests of raptors and migratory birds are not disturbed, vegetation removal shall be avoided during the nesting season (generally

March 1 to July 31), to the extent possible. If vegetation removal must occur during the nesting season, a focused survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the project site. The survey shall be conducted no more than 30 days prior to the beginning of construction or tree removal. If nesting birds are found during the focused survey, the nest tree(s) shall not be removed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no construction shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the Department of Fish and Game (the size of the construction buffer zone may vary depending on the species of nesting birds present).

MITIGATION MEASURE IV.3: The loss of native oaks and conifers with a diameter at breast height (dbh) of five inches or greater shall be avoided to the extent feasible, as determined by a qualified botanist in consultation with the construction project manager. Measures may include minimizing the width of the construction corridor to avoid mature trees, installing temporary construction fencing to protect trees, limiting staging areas to lands that do not support mature trees, and other actions deemed appropriate during pre-construction field evaluation.

MITIGATION MEASURE V.1: If any cultural resources (i.e., human bone or burnt animal bone, midden soils, projectile points, humanly-modified lithics, historic artifacts, etc.) are encountered during any phase of construction, all earth-disturbing work shall stop within 100 feet of the find until a qualified archaeologist and/or the County Coroner can make an assessment of the discovery and recommend/implement mitigation measures as necessary. Treatment of any human remains shall be in accordance with California Health and Safety Code 7050.5 and Public Resources Code 5097.98.

6.2 Description of Project Alternatives and Impact Analysis

No other alternatives are being considered in this document other than the "no project" alternative, discussed below. Only the proposed sites were selected for impact assessment, due to the presence of existing roads, antennae fields, and/or other facilities. Other locations in the proposed service area would require preparation of new sites, which would result in added costs and added environmental impacts for project construction. Selection of the proposed sites also took into account the collaborative relationship between Indian Springs Telecom and the landowners of the proposed tower sites and powerline corridors, which also facilitates project implementation.

No Project Alternative

The No Project Alternative would result in the continued lack of telephone service to the unserved areas of northeastern Shasta County. The area currently contains 5,000 residents, of which 500 families area without telephone service. No change would occur in the level of services provided. The No Project Alternative would not result in any environmental changes; however the continued lack of service would not meet the objectives of the project, or the needs of area residents.

6.3 Growth-Inducing Impacts

The proposed project would not provide for any new housing or public facilities. Phone service would be made available in an area that is currently unserved; however, this is not expected to have any perceptible growth-inducing impact.

6.4 Suggested Applicant Proposed Measures to Address GHG Emissions

The following Applicant Proposed Measures, related to greenhouse gas emissions, is presented in Section 3: Air Quality.

Mitigation Measure III.2: Greenhouse gas emissions generated during project construction shall be minimized by implementing the following:

- Using ARB-certified diesel construction equipment.
- Using alternative fuel types for construction equipment, such as biodiesel.
- Using local building materials.
- Limiting construction vehicle idling time.

Chapter 7: Federal Permits/Actions Requiring NEPA Review

No federal permits/actions requiring NEPA review are necessary for this project.

Chapter 8: List of Preparers

ENPLAN

Randall Hauser, R.E.A., A.I.C.P. ..... Principal/Environmental Planner
Donald Burk .....Environmental Services Manager
Julie Symons ..... Environmental Planner
Darrin Doyle ..... Environmental Scientist
Benita Moore ..... GIS Specialist
Wayne Wiant ..... Senior Archaeologist/Principal Investigator
Cindy Crom ..... Administrative Assistant

Chapter 9: Lists of Tables, Figures, and Appendices

Tables

Figures

Appendices