

4.1 LAND USE

4.1.1 INTRODUCTION TO LAND USE

Land use refers to the use of land for various purposes and activities, including residential, commercial, industrial, and recreational purposes. Local land use policies and development regulations control the types of land uses and the intensity of development permitted on private property. Changes in land use, especially as a result of new development, can alter the characteristics of an area and result in various types of impacts to the physical environment. Many of the potential impacts to the environment resulting from land use changes associated with the proposed project are addressed in other sections of this EIR. This section of the EIR describes existing land use patterns in the vicinity of project lands, as well as applicable land use policies and regulations, and addresses the potential for adverse effects on land use associated with the project, specifically, potential adverse impacts related to incompatibilities between existing and future land uses.

Chapter 3 laid out the development assumptions used in the environmental analysis. This section includes descriptions of the system-wide regulatory context and environmental setting as they pertain to land use, followed by the local setting and regulatory context for lands in each of the five regional bundles. This section also includes descriptions of the standards used to determine the significance of land use impacts and the methodology used to conduct the impact analysis. In the impact analysis, potential impacts are discussed for each regional bundle and impact conclusions are presented at the bundle, regional bundle, and system-wide levels.

4.1.2 SYSTEM-WIDE REGULATORY CONTEXT

4.1.2.1 Federal Regulations and Policies

To the extent Federal lands or water rights are necessary or useful in the operation of a FERC-licensed hydroelectric facility, the FERC license creates a possessory right to the use of such lands. Pacific Gas and Electric Company holds possessory interests in Federal public lands managed by the U.S. Forest Service (USFS) and the U.S. Bureau of Land Management (BLM) that are derived primarily from the Federal Energy Regulatory Commission (FERC) licenses. The majority of land rights for Pacific Gas and Electric Company's facilities constructed on Federal lands prior to the Federal Land Policy and Management Act (FLPMA) of 1976 are derived from the applicable FERC license. For facilities constructed after the FLPMA, either Special Use Permits (SUPs) from the USFS or authorization from the BLM have been required.

Federal Energy Regulatory Commission-FERC

The FERC regulates the use of land within the boundaries of FERC-licensed facilities. The FERC license authorizes the construction and operation of hydroelectric power generating facilities, subject to the terms and conditions of the license, and often authorizes licensees to grant permission

to others for certain types of uses on FERC license lands and waters. FERC generally limits the amount of land that can be conveyed during any calendar year and limits the uses for which the land interest may be conveyed. FERC requires that such uses protect and enhance the scenic, recreation, and environmental values of the lands. The non-hydropower uses associated with the lands proposed for ownership transfer include open space, timber management, housing, and environmental enhancements such as fish hatcheries, roads, recreation, and agriculture. Some lands in or near the projects have current or historical mining associated with them.

To the extent Federal lands or water rights are necessary or useful in the operation of a FERC-licensed facility, the FERC license creates a possessory right to use the designated Federal lands for such purposes. FERC jurisdiction is generally preemptive and supersedes the jurisdiction of other Federal agencies over such land, such as the BLM, USFS, and National and State Park agencies. However, the Federal Power Act (FPA) requires consultation with other affected Federal and State agencies before issuance of an original license or license renewal. It permits such agencies to request certain conditions to the license that FERC either may, or in certain cases must, impose on the licensee. For example, Federal resource agencies have authority in the relicensing process through the Fish and Wildlife Coordination Act, FPA Sections 4(e), 10(j), and 18, and the Endangered Species Act; and State agencies are authorized to participate in the relicensing process through Section 10(j) of the FPA, the Fish and Wildlife Coordination Act, the Clean Water Act (CWA), the Coastal Zone Management Act, and National Historical Preservation Act (NHPA).

Prior to conveying an interest in land covered by the license, a licensee must inform FERC of its intent to convey the interest and identify the Federal or State agency officials that have been consulted and Federal and State approvals that are required. Upon such notification, FERC may require the licensee to file an application for approval prior to the conveyance. Further, FERC generally places conditions on the conveyances that require the licensee to (1) consult with Federal and State fish and wildlife or recreation agencies and the State Historic Preservation Officer (SHPO), (2) determine that the proposed use is consistent with approved recreation plans, (3) include covenants running with the land adequate to ensure that the use will not endanger health or create a nuisance, and (4) ensure that construction, operation, and maintenance will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

Typically, the standard land use article in the FERC license also specifies the few types of uses for which the licensee may grant land use permission to others without prior FERC approval. These uses are generally limited to landscaping, erosion control, and non-commercial piers, landings, boat docks, and similar facilities.

USFS - National Forest Land and Resource Management Plans

Portions of the project lands in each of the regional bundles are located within the boundaries of National Forests administered by the USFS, specifically the Plumas, Lassen, Shasta-Trinity,

Eldorado, Stanislaus, Tahoe, Mendocino, Sierra, and Sequoia National Forests. Each National Forest has adopted a Land and Resource Management Plan (LRMP) to guide the management of these lands and the resources they contain. The goals of these plans are, among others, to monitor and protect habitat for Federally-listed threatened, endangered, and candidate species; provide for continued use and new development of hydroelectric facilities; provide a variety of high quality outdoor recreation experiences; and expand recreational fisheries opportunities. The provisions of these plans are applicable to project lands located within National Forest boundaries.

USFS Special Use Authorization and Special Use Permits

Land uses in the FERC licensed portions of the project area are subject to the terms of a USFS Special Use Authorization. For facilities constructed after the FLPMA, the USFS has generally required SUPs. These permits cover facilities such as powerhouses, switchyards, flumes, canals, roads, gaging stations, and recreation facilities. The SUPs must be consistent with the National Forest LRMP for the respective forest.

Bureau of Land Management Resource Management Plans

Portions of the project lands in the Shasta and Kings Crane-Helms Regional Bundles are located within the boundaries of land administered by the BLM. Development on or access across Federal lands managed by the BLM requires authorization by the BLM. For lands inside FERC license boundaries, such authorization is granted in the FERC license. For lands outside FERC license boundaries, the BLM requires private parties to obtain a BLM right-of-way or easement. For each of BLM's designated Resource Management Areas, a Resource Management Plan has been adopted to guide the management of the land and associated resources. The provisions of these plans are applicable to Federal project lands located within the boundaries of designated Resource Management Areas.

4.1.2.2 State Regulations and Policies

State Planning and Zoning Laws

Under State planning law, each city and county must adopt a comprehensive, long-term general plan for the physical development of both the city and county and any land outside the jurisdictions' boundaries that relates to its planning. General plans are required to include the following mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. The requirements for general plans are contained in Government Code Sections 65300-65457.

City and county general plans throughout the State describe appropriate land uses within their jurisdictions and establish policies to guide development and protect valuable resources. All activities undertaken by the local jurisdiction, including approval of private development, must be consistent with the local general plan. The general plans for the counties in which the hydroelectric facilities are located include policies that guide land use as well as development of infrastructure

and provision of public services. In addition, policies are typically designed to protect water resources and water supply systems, protect sensitive species and their habitats, provide recreational opportunities, minimize flood hazards, and permit or encourage hydroelectric power facilities.

To implement the land use policies of the general plan, cities and counties adopt specific land use and development regulations, typically in the form of a zoning ordinance. State law requires that zoning regulations be consistent with the policies and other provisions of the general plan. Through the zoning ordinance, land within each jurisdiction is placed within zoning districts for which regulations and standards are established that specify permitted uses, maximum intensity of development, required setbacks, permitted building heights, and other specific rules governing the use and development of land within individual districts. Any future development of land divested by Pacific Gas and Electric Company would be subject to applicable regulations in local zoning ordinances.

State law also requires cities and counties to adopt ordinances governing the subdivision of land (California Government Code Sections 66410-66499). Similar to zoning ordinances, subdivision ordinances must be consistent with the policies and other provisions of the general plan. Any future subdivision of land parcels divested by Pacific Gas and Electric Company would be subject to local subdivision ordinances.

The extent to which local general plans and zoning regulations apply to Pacific Gas and Electric Company lands within FERC license boundaries is subject to applicable preemption doctrines and specific conditions of the FERC license. FERC license provisions often direct licensees to comply with local plans or require consultation with State and local agencies regarding land uses otherwise within the purview of FERC and other Federal agencies. Pacific Gas and Electric Company lands located outside of FERC license boundaries are subject to local land policies and regulations to the same extent as any other private land in a given jurisdiction. For these reasons, policies and standards set forth in local plans and ordinances are relevant to the assessment of foreseeable changes in land use.

California Department of Forestry and Fire Protection - Timber Management

To harvest timber in California, a Timber Harvest Plan (THP) must be prepared and submitted to the California Department of Forestry and Fire Protection (CDF) in accordance with Forest Practice Rules. A THP serves as the functional equivalent of an environmental impact report (EIR) prepared in accordance with CEQA.

Foresters preparing a THP must address in detail the chosen operation methods and possible adverse environmental impacts and also propose mitigation measures to offset any such impacts. Each THP is subject to multi-disciplinary review that may include CDFG biologists, archaeologists,

silviculturists, hydrologists, geologists, and the public. Ultimately, the CDF is the lead agency responsible for reviewing and approving, conditioning or denying a THP.

Many of the areas proposed for ownership transfer have been designated as Timber Production Zones (TPZs). A TPZ is a ten-year restriction on the use of land. In 1976, TPZs replaced the designation of agricultural preserves (Williamson Act contracts) for timberlands. Cities and counties designate which parcels meet the criteria for TPZs and administer the designations through their local zoning programs. The CDF regulates the growing and harvesting of timber on these parcels.

4.1.3 SYSTEM-WIDE SETTING

Pacific Gas and Electric Company's hydroelectric assets are distributed across a large geographic area along the western slope of the southern Cascades and the Sierra Nevada and, in the Eel and Russian River Basins, in the Coastal Range. Because of the large geographic area encompassed by the system, there are a variety of different types and sizes of human settlements and a broad spectrum of economic activities represented in the region. Because the system extends from Kern County in the south to Shasta County in the north, a large number of central and northern California's major population centers are located within 75 miles of the various hydroelectric assets, including Bakersfield, Fresno, Modesto, Sacramento, Redding, and Santa Rosa. While these cities and surrounding areas each contain hundreds of thousands of residents and a complete array of economic activities and land uses, the hydroelectric assets are generally located in remote areas with few permanent residents and relatively little developed land.

The Sierra Nevada, where most of Pacific Gas and Electric Company's hydroelectric assets are located, consists of rugged mountainous terrain that is used primarily for timber harvesting, outdoor recreation, mining, and grazing. People residing in these mountain regions are generally concentrated in small communities along major highways and near developed recreation areas. Much of the region remains as wilderness managed by the USFS and the BLM. Similarly, the Coastal Ranges are fairly rugged and primary land uses are generally limited to timber harvesting, outdoor recreation, grazing, and some agriculture. Local populations are primarily concentrated in small communities along Highway 101 and other regional routes.

Human settlement is not evenly distributed across the Sierra Nevada. Nearly 70 percent of the population in the Sierra Nevada resides in the western foothill zone, and approximately three-fifths of these residents live on land that constitutes less than one percent of the total land in the Sierra Nevada. The construction of Interstate 80 and Highway 50 increased the accessibility of the region and changed the patterns of resource utilization and settlement, primarily in Nevada, Placer, and El Dorado Counties where rapid population growth has occurred. New residents have been attracted to the amenities offered by the Sierra Nevada, with retirees, commuters, and former urban dwellers migrating to the region in increasing numbers. At the same time, employment has declined in the traditional resource extraction and commodity-based industries (i.e., timber, mining, agriculture)

and the recreation and tourism sectors of the regional economy have grown. The result is a changing population structure and a changing relationship between the region's residents and resources as the population becomes less dependent on the resource extraction economy and more oriented to tourism and recreation.

The five regional bundles encompass territory in 21 counties in northern and central California. Brief descriptions of the counties in which the regional bundles are located are provided below.

The Shasta Regional Bundle includes assets located in Shasta and Tehama Counties, which have an estimated combined population of 223,200. There are three incorporated cities in Shasta County: Redding (population [pop.] 79,600), Anderson (pop. 8,800), and Shasta Lake (pop. 9,425). Tehama County also has three incorporated cities: Corning (pop. 6,150), Red Bluff (pop. 13,150), and Tehama (pop. 430). Redding is the largest city north of Sacramento, and serves as the county seat and the center for government, retail trade, wholesale trade, commerce, and recreation for a large portion of northern California. Unincorporated communities in the vicinity of assets in the Shasta Regional Bundle include Manton, Burney, and Fall River Mills.

The DeSabra Regional Bundle includes assets located in Plumas, Butte, and Lassen Counties, which have an estimated combined population of 258,300. There is one incorporated city in Plumas County, Portola (pop. 2,080). Butte County has five incorporated cities: Biggs (pop. 1,750), Chico (pop. 55,400), Gridley (pop. 5,050), Oroville (pop. 12,650), and Paradise (pop. 26,300). The only incorporated city in Lassen County is Susanville (pop. 17,100). Chester is an unincorporated community near Lake Almanor.

The Drum Regional Bundle includes assets located in Placer, Nevada, El Dorado, Mendocino, and Lake, and Yuba Counties, which have an estimated combined population of 682,400. The incorporated cities in Placer County are Auburn (pop. 11,400), Colfax (pop. 1,500), Lincoln (pop. 9,675), Loomis (pop. 5,925), Rocklin (pop. 35,250), and Roseville (pop. 74,200). The incorporated cities in Nevada County are Grass Valley (pop. 9,950), Nevada City (pop. 2,920), and Truckee (pop. 12,900). There are two incorporated cities in El Dorado County: Placerville (pop. 9,325) and South Lake Tahoe (pop. 23,000). The incorporated cities in Mendocino County are Fort Bragg (pop. 6,425), Point Arena (pop. 440), Ukiah (pop. 14,950), and Willits (pop. 5,150). Two incorporated cities exist in Lake County: Clearlake (pop. 11,900) and Lakeport (pop. 4,600). There are two incorporated cities in Yuba County: Marysville (pop. 12,250) and Wheatland (pop. 1,980).

The Motherlode Regional Bundle includes assets located in Amador, Alpine, Calaveras, Tuolumne, Mariposa, and Merced Counties, which have an estimated combined population of 353,340. There are five incorporated cities in Amador County: Amador (pop. 220), Ione (pop. 7,100), Jackson (pop. 3,870), Plymouth (pop. 830), and Sutter Creek (pop. 2,090). Angels Camp (pop. 3,060) is the only incorporated city in Calaveras County. The City of Sonora (pop. 4,240) is the only incorporated city in Tuolumne County. There are six incorporated cities in Merced County:

Atwater (pop. 22,550), Dos Palos (pop. 4,460), Gustine (pop. 4,440), Livingston (pop. 10,550), Los Banos (pop. 23,250), and Merced (pop. 63,300). There are no incorporated cities in Alpine and Mariposa Counties. Agriculture, recreation, tourism, and timber harvest are the major economic activities in this region.

The Kings Crane-Helms Regional Bundle includes assets located in Madera, Fresno, Tulare, and Kern Counties, which have an estimated combined population of 1,949,000. There are two incorporated cities in Madera County: Chowchilla (pop. 13,650) and Madera (pop. 37,600). Fresno County includes 15 incorporated cities, the largest of which are Fresno (pop. 420,000), Clovis (pop. 70,700), and Reedley (pop. 20,950). Tulare County has eight incorporated cities, the largest of which are Visalia (pop. 96,800), Tulare (pop. 41,800), and Porterville (pop. 37,600). The largest of Kern County's eleven incorporated cities are Bakersfield (pop. 237,200) and Delano (pop. 35,550). Agriculture is prominent in this region, and each of the counties is a leading producer of agricultural commodities. Fresno is the sixth most populous city in California and the largest city in the Central Valley.

4.1.4 REGIONAL AND LOCAL SETTING AND REGULATORY CONTEXT

4.1.4.1 Shasta Regional Bundle

This section provides an overview of uses on lands to be conveyed to the new owners in the Shasta Regional Bundle. It also describes the planned land uses and the regulatory framework governing these land uses. The section then describes the existing land uses at specific hydroelectric projects and discusses land use policies and regulations that affect lands within the vicinity of these FERC-licensed facilities.

Regional Setting

The Shasta Regional Bundle is located primarily in eastern Shasta County with a small portion located in northern Tehema County. In 1980, the population in Shasta County was 115,715. The 1990 Census reported a population of 147,036. The State Department of Finance (DOF) estimated the County population in January 2000 to be 167,000, resulting in a 1.3 percent increase from 1999. The DOF estimated the Tehema County population in January 2000 to be 56,200 resulting in a 1.8 percent increase from 1999 (refer to Section 4.10, Population, Employment, and Housing).

Approximately 47,465 acres of Project Land are located in the Shasta Regional Bundle, of which approximately 38,439 acres of land are Watershed Lands. The lands associated with the Pacific Gas and Electric Company hydroelectric generation facilities in the Shasta Regional Bundle, including Watershed Lands and service centers, are listed in the table below.

Table 4.1-1 Acreage Summary for the Shasta Regional Bundle

Project, Service Center, or Land Parcel	FERC License #	FERC Acreage	Watershed Acreage	Total Acreage
Hat Creek 1 and 2 Project	2661	426	2,672	3,098
Pit 1 Project	2687	2,800	8,663	11,463
Pit 3, 4, and 5 Project	233	3,158	11,980	15,138
McCloud-Pit Project	2106	1,577	6,556	8,133
Kilarc-Cow Creek Project	606	117	2,490	2,607
Battle Creek Project	1121	933	6,078	7,011
Manton Hydro Service Center	N/A	15	0	15
Total		9,026	38,439	47,465

A majority of the Watershed Lands in the Shasta Regional Bundle were acquired as part of Pacific Gas and Electric Company’s acquisition of predecessor companies over the past 100 years. Most of the Watershed Lands are undeveloped and are generally difficult to access due to remote, often hilly and mountainous terrain. Limited access is provided by improved public roads or trails.

Pacific Gas and Electric Company has issued licenses or permits to or has entered into leases with third parties for limited types of activities or uses on these Watershed Lands, including recreational housing, livestock grazing, roads, recreation, utility lines, and telecommunications facilities. Pacific Gas and Electric Company also conducts timber management in accordance with State-approved THPs. Some lands within or near the Watershed Lands have current or historical mining associated with them.

Local Regulations and Policies

Plumas National Forest Land and Resource Management Plan

The Plumas National Forest LRMP (USFS, 1988) goals and policies relating to lands and land use include the following:

- Maintaining or improving water quality to protect beneficial uses;
- Preventing degradation of groundwater quality;
- Limiting disturbance in streamside management zones to protect riparian areas;
- Maintaining habitat to support populations of native and desired non-native species;
- Facilitating permitting of hydroelectric development that reasonably protects all resources;
- Minimizing the risk from flood hazards; and
- Providing forest-related recreation and coordinating recreation with other resource uses.

Management prescriptions are land use categories to which all USFS lands are allocated for various purposes. Each prescription is comprised of appropriate standards and guidelines that will meet

some particular need (such as special habitat protection, recreation quality enhancement, or timber production), while allowing other compatible activities.

Lassen National Forest Land and Resource Management Plan

The Lassen LRMP provides direction for planning and conducting resource management activities on National Forest land in the Lassen National Forest (LNF) (USFS, 1993). Applicable LRMP goals relating to lands and land use include:

- Providing water of sufficient quality and quantity to meet current needs;
- Avoiding significant cumulative effects on water quality and fisheries;
- Managing riparian areas and maintaining or improving riparian-dependent resources;
- Maintaining or improving habitat for all native and compatible non-native fish species;
- Maintaining habitat and viable populations of sensitive plants;
- Managing sensitive plants to ensure that species do not become threatened or endangered;
- Providing long-term rangeland productivity for all resource values; and
- Providing a wide range of outdoor recreation opportunities.

The LRMP assigns management prescriptions for all the LNF land. The prescriptions specify management practices in addition to the Forest Standards and Guidelines that apply to the allocated areas. Most importantly, prescriptions define the array of appropriate vegetation manipulation activities that are compatible with the purpose of the prescription. The following prescriptions apply to lands immediately adjacent to Pacific Gas and Electric Company lands (USFS, 1993):

- A Non-Timber Wildlife;
- B Range/Wildlife;
- C Firewood;
- D Developed Recreation;
- E Early Successional;
- F Riparian/Fish;
- G Old Growth/Goshawk;
- K Rocky/Sparse Timber;
- L Late Successional;
- M Semi-Primitive Motorized Recreation;
- N Semi-Primitive Non-Motorized Recreation;
- R Range;
- S Special Areas;
- T Timber;
- V View/Timber;
- W Wilderness; and
- Z Minimal Management.

Shasta-Trinity National Forest Land and Resource Management Plan

The overall management philosophy of the Shasta-Trinity National Forest is to realize integrated multiple resource land management in the context of ecosystem management. This goal is to be achieved through the implementation of an environmental agenda that has three factors:

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- Preservation—the protection of unique landscapes and their wild and scenic characteristics for the indefinite future;
- Biodiversity—at all ecosystem scales, the maintenance of a rich diversity of plants, fish, and wildlife; and
- Sustainable Development for People—providing high quality recreational experiences, a long-term sustained yield of timber, forage and other resource products, and services consumed by society. This last facet will be compatible with the Preservation and Biodiversity goals.

BLM's Redding Resource Management Plan

The BLM's Redding Resource Management Plan is a 15-year strategy that indicates where and how the BLM will administer public lands within the Redding Resource Area. When fully implemented, the BLM public land ownership pattern will shift dramatically from more than 1,000 scattered parcels to less than 25 large aggregates of accessible and useful public lands. This will be accomplished principally through land exchanges with private landowners and transfers of jurisdiction with other agencies and non-governmental organizations (BLM, 1993). The BLM Forks of Butte Creek Area of Critical Environmental Concern (ACEC) (Retain and Acquire) management area contains Pacific Gas and Electric Company land. The goals of the Redding Resource Management Plan for this area include the following:

- Enhance scenic quality;
- Maintain fisheries habitat;
- Improve riparian to Class I;
- Maintain semi-primitive recreation opportunities;
- Allow timber harvesting if not in conflict with ACEC; and
- Protect historic values of the canyon.

Shasta County General Plan and Zoning Code

The current Shasta County General Plan was adopted in January 1984 and amended in 1998. The elements of the Shasta County General Plan have been organized and consolidated into three element groups: Community Development, Resources, and Public Safety. Within each element group, constituent elements are addressed separately but cover a variety of topics as they relate to other pertinent areas of the General Plan. The Community Development Group addresses land use and the development pattern in Shasta County.

The Shasta County General Plan Community Development objectives include:

- Promote a development pattern which will accommodate the growth which will be experienced by Shasta County during the planning period;
- Guide development in a pattern that will respect the natural resources values of County lands, minimize land use conflicts between adjacent land users, establish an acceptable balance between public services costs and public revenues; and
- Recognize that the major economic resources for achieving the development pattern will come from the private sector.

The Shasta County General Plan addresses a 20-year time period, requiring a comprehensive review and revision at five-year intervals. Currently, the plan extends from 1998 to roughly 2020, with periodic revision amendments.

The Shasta County Zoning Code identifies zoning classifications for Pacific Gas and Electric Company land (see Table 4.1-2).

Table 4.1-2 Shasta County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Timberland	Timber Production Zone (TPZ)	Consistent with mandates of Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976. Timber management uses. One dwelling per 160 acres.
Timberland	Timberland District (TL)	Timberland not in TPZ zoning. Forest management, agricultural uses, low-intensity recreation, one-family residence on 40 to 80-acre minimum parcel size.
Timberland or Agriculture Cropland	Unclassified District (U)	"Holding district until a precise principal zone district has been adopted for the property." Uses shall be consistent with policies of the General Plan. One family residence. Timber and agricultural uses. Minimum lot area determined by general plan designation.
Suburban Residential	Interim Rural Residential (I-R)	Areas where development is imminent. Agricultural uses, one-family residence, minimum 5-acre parcel.
Agriculture Cropland or Agricultural Grazing	Exclusive Agriculture (EA)	Agricultural uses, low intensity recreation. One family residence, 40 to 160-acre minimum parcel size.
Natural Resource Protection-Open Space	Open Space (OS)	Forest management, agricultural uses, low-intensity recreation.

Tehema County General Plan and Zoning Code

The current Tehema County General Plan was adopted by the Board of Supervisors in 1983, and serves as the long-term planning document until 2010. The elements of the Tehema County General Plan have been organized and consolidated into three element groups: Community Development, Resources, and Public Safety. Within each element group, its constituent elements are addressed separately but cover a variety of topics as they relate to other pertinent areas of the General Plan. The Community Development Group addresses land use and the development pattern within Tehema County.

The Tehema County General Plan (Tehema County, 1983a) objectives include:

- Planned development that encourages community oriented living environments and reduce agricultural land conversions;
- Promote development that maximizes the use of existing public roads.
- Encourage compact development and accommodate growth in a manner that preserves the predominant rural lifestyle of the County.

The Tehema County General Plan is based on the following four concepts:

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- Accommodating growth, but not limiting growth or accepting uncontrolled growth;
- Locating major growth along the Interstate 5 transportation corridor;
- Organizing growth according to a range of community types; and
- Preserving agricultural land resources.

The Tehema County Zoning Code identifies the following land use designations and zoning classifications for Pacific Gas and Electric Company land (Tehema County, 1983b):

Table 4.1-3 Tehema County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Timber	Timber Production Zone (TPZ)	Consistent with mandates of Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976. Timber management uses. One dwelling per 160 acres.
Grazing	Upland Agriculture (UA: 6969)	Grazing of livestock. Farming. One family unit per lot.
Natural Resource/Government Lands	Natural Resource and Recreation District (NR)	Properties to be preserved in a natural state, open space buffers, and recreational uses. One, one-family dwelling unit on 40-acre minimum parcel.

Bundle 1: Hat Creek

The Hat Creek Bundle contains one FERC licensed project, the Hat Creek 1 and 2 project. This bundle is located in Shasta County approximately 60 miles east of Redding, and is abutted by both Lassen National Forest and Shasta-Trinity National Forest lands to the north and east, with private landholdings to the south and west. Part of the Upper Sacramento River system, the Hat Creek 1 and 2 project area experiences a variety of uses, primarily recreational in nature. Fishing, swimming, camping, hiking, and hunting all occur in the vicinity of the Hat Creek 1 and 2 project. Adjacent land uses include timber harvest, some mining, and, due to the sparse population and lack of urban development, dispersed recreation occurs on public lands.

Hat Creek 1 and 2 Project (FERC 2661)

The Hat Creek 1 and 2 project is in the northeastern portion of Shasta County, adjacent to the unincorporated community of Cassel, and near the unincorporated communities of Burney, Johnson Park, and Fall River Mills. The primary industries in the county are forest products, agriculture and tourism. There is also one mine located near the town of Cassel. Most of the project area is owned by Pacific Gas and Electric Company, with small portions managed by the Shasta-Trinity and Lassen National Forests, BLM, and some private owners.

Land uses within the 426 acres of FERC-licensed lands are hydroelectric generation and recreation. Pacific Gas and Electric Company leases land to the CDFG for the operation of a fish hatchery at Crystal Lake. The Crystal Lake Fish Hatchery sits on the west bank of Hat Creek between the Hat 1 and Hat 2 Powerhouses, on Hat Creek 1 and 2 Project lands.

Watershed lands contiguous to the FERC Project 2661 boundary include land that is generally surrounding Crystal and Baum Lake, the Hat 1 Reservoir, and project facilities. Other Watershed Lands not containing FERC boundaries are located outside the unincorporated town of Cassel.

Primary uses on the Watershed Lands and nearby lands include recreation and livestock grazing. For the Watershed Lands associated with the Hat Creek 1 and 2 Project, Pacific Gas and Electric Company has entered into a license agreement with the California Department of General Services for a fuel break. A grazing lease is located on one parcel surrounding Crystal Lake. There are no THPs associated with this land.

Bundle 2: Pit River

The Pit River Bundle consists of three FERC projects: McCloud Pit (FERC 2106), Pit 3, 4, and 5 (FERC 0233), and Pit 1 (FERC 2687). The westernmost portion of the Pit River Bundle consists of productive timberland. This area is essentially unpopulated. This land follows the course of the Pit River, and ranges in elevation from about 1,200 feet at the river's level to up to 3,500 feet. Further to the east, the bundle landscape becomes more transitional to mixed conifer and foothill vegetation until it reaches the Fall River Valley (elevation 3,300). Here the land is gently rolling, except in places where river courses have incised deep canyons. The mild summers are conducive to high recreation use. Small communities lie along State Route 299, though generally the population is rural and dispersed.

Pit 1 (FERC 2687)

The Pit 1 Project is located in a remote part of Shasta County between the towns of Fall River Mills and Burney. It is the uppermost of nine hydroelectric projects owned by Pacific Gas and Electric Company in the McCloud-Pit River Watershed.

Pacific Gas and Electric Company's land use in the FERC-licensed portion of the Pit 1 Project area consists primarily of activities and structures associated with hydroelectric generation. Other uses in the lands adjacent to the Pit 1 Project include commercial and residential development, grazing, timber production, and limited recreational facilities located at Big Lake (day use and fishing access area). Dispersed recreation occurs in accessible areas associated with the Pit 1 Project, as well as on National Forest lands in the general vicinity. The segment of Fall River between the Pit 1 Forebay and the Fall River weir bisects the town of Fall River Mills. Portions of the McArthur Swamp are currently within the project boundaries.

The Pit 1 Project is currently in relicensing through FERC. In its relicensing application, Pacific Gas and Electric Company proposes to remove those portions of McArthur Swamp that are within the FERC boundaries and donate the land to the California Waterfowl Association (CWA). The proposal to donate the Swamp to CWA is part of a separate application filed at the CPUC.

The Pit 1 Project includes 2,800 acres of FERC-licensed land, including acreage lying under Pacific Gas and Electric Company's reservoirs. In addition to the McArthur Swamp land mentioned above, FERC-licensed land is located throughout the small town of Fall River Mills around project facilities such as the Pit 1 Forebay, and the Fall River and Pit 1 Diversion Dams.

Approximately 8,663 acres of Watershed Lands are included in the Pit 1 Project. These Watershed Lands are located within and surrounding the small town of Fall River Mills. Additional Watershed Lands are located in the Fall River Valley south of McArthur Swamp, south of Fall River Mills between the Pit River and Cassel Fall River Road.

Land uses on the Watershed Lands and the surrounding area include commercial and residential developments, livestock grazing and recreation. On the Watershed Land Pacific Gas and Electric Company has issued a permit for a library and office and has entered into a rental agreement for a recreational home site and a lease for agricultural activities. Pacific Gas and Electric Company has also entered into leases with individuals to allow livestock grazing on the Watershed Lands. One lease remains active located along Pit River immediately south of Fall River Mills (SBE# 135-45-31A-2). There are no THPs associated with these Watershed Lands.

Pit 3, 4, and 5 (FERC 0233)

The Pit 3, 4, and 5 Project is in Shasta County, ten miles northwest of Burney. The Pit 3, 4, and 5 Project lands extend from Big Bend to the Pit 1 Powerhouse following the course of the Pit River. This area is partially located in the Shasta National Forest. McArthur-Burney Falls Memorial State Park is located immediately south of Lake Britton, a reservoir created by Pacific Gas and Electric Company's Pit 3 Dam.

Uses on the FERC-licensed lands are primarily activities and structures associated with hydroelectric generation, including FERC-mandated recreational uses. Camping, boating, swimming, and fishing opportunities are provided by Pacific Gas and Electric Company in the Lake Britton area. Uses on lands adjacent to the Pit 3, 4, and 5 Project include recreation, timber management, and mining. There are active diatomaceous mines located one-half mile north of the Pit 3 Dam. There is a diatomaceous mine on Pacific Gas and Electric Company property at Lake Britton that Pacific Gas and Electric Company leases to the Calaveras Cement Company.

In a separate application filed with the CPUC, Pacific Gas and Electric Company is proposing to transfer a 182-acre parcel of land within the Pit 3, 4, 5 FERC boundary to the California Department of Parks and Recreation (DPR) as part of a land exchange. The land, located south of Lake Britton containing Burney Falls, is already leased to DPR, which utilizes the parcels for recreational facilities provided on the southern shores of Lake Britton at McArthur-Burney Falls

Memorial State Park¹. Transferring the land to DPR would ensure its continued use for recreational purposes.

The Pit 3, 4, 5 Project includes 3,158 acres of FERC-licensed land, including acreage under Pacific Gas and Electric Company's reservoirs. The FERC boundary encircles the Lake Britton, Tunnel, Pit 4 Reservoirs; the Pit 5 and James B. Black Powerhouse; and follows roads related to Pacific Gas and Electric Company's hydroelectric facilities throughout.

Approximately 11,980 acres of Watershed Lands are in the Pit 3, 4, and 5 Project. These Watershed Lands generally extend beyond the FERC boundaries described above. Considerable Watershed Land also extends through the Flat Wood area east of Pit 6 Powerhouse and north of the Tunnel Reservoir. The Watershed Lands are in a remote, mostly undeveloped area, some of which is within the Shasta National Forest.

Uses of these Watershed Lands, typical of the surrounding area, include dispersed recreational uses and timber management. Many of the recreational opportunities on the Watershed Lands associated with the Pit 3, 4, and 5 Project are centered on several parcels located east of Lake Britton, south of SR 299, along the Pit River. (Pacific Gas and Electric Company maintains an access road and parking area that provide access to a popular fishing spot on Hat Creek, just below the Hat 2 Powerhouse.) There are several other unimproved dirt roads on Watershed Land parcels that provide access to various points along the Pit River between the Pit 1 Powerhouse and Lake Britton.

One of the turnouts on Pit Reach Road (west end of Lake Britton) is located on a parcel of Pacific Gas and Electric Company's Watershed Lands. This same parcel is also crossed by the Pacific Crest Trail (PCT).

A review of Pacific Gas and Electric Company agreements/licenses for this area indicates that the following land uses take place on these Watershed Lands:

- Hiking and camping;
- Fire fuel break;
- Fire station;
- Rifle range and shooting club; and
- Road building activities.

The Watershed Lands associated with the Pit 3, 4, and 5 Project contain one non-active and two active THPs (see Section 4.2, Forestry).

¹ Application of Pacific Gas and Electric Company, the State of California, and the California Waterfowl Association Establishing the Market Value of and Authorizing Pacific Gas and Electric Company to Transfer to DPR Certain Pieces of Land in Shasta County ("Burney Falls") in exchange for land Currently Owned by DPR ("Ahjumawi"). May 15, 2000.

McCloud-Pit (FERC 2106)

The McCloud-Pit Project is in Shasta County near the communities of McCloud, Hillcrest, and Montgomery Creek. Many of the McCloud-Pit Project facilities and surrounding land are surrounded by Shasta National Forest. Land throughout this area is mostly undeveloped, with some cabins and small communities, and remote canyons and hillsides.

FERC-licensed land in the McCloud Pit Project includes McCloud and Iron Canyon Reservoirs, land following the course of the Pit River between the Pit 5 Powerhouse and the Pit Reservoir, and land following a project road through the Flat Woods Area to the Pit River. Uses in the McCloud-Pit Project area consists primarily of activities and structures associated with hydroelectric generation. Other uses in the lands surrounding the McCloud-Pit Project area include timber management, dispersed recreation on public lands, and commercial and public recreation opportunities on the McCloud River and McCloud Reservoir. Pacific Gas and Electric Company has issued permits for private roads and a license to the State of California for a fuel break.

Approximately 6,556 acres of Watershed Lands are in the McCloud-Pit Project. Watershed lands also compose an extensive landholding south of Big Bend. Many parcels of the Watershed Lands are surrounded by Shasta National Forest lands. The Watershed Lands and the surrounding area are mostly undeveloped, with some cabins and small communities, remote canyons and hillsides. These Watershed Lands are heavily forested and may be used by deer hunters.

The Watershed Lands associated with the McCloud-Pit Project include two active and one non-active THPs. In addition to the above plans, Pacific Gas and Electric Company is signatory to a Coordinated Resource Management Plan (CRMP), that provides measures to protect the McCloud River. The signatories include USFS, CDFG, Bolli Bokka Land Company, Sierra Pacific Industries, Hearst Corporation, the Nature Conservatory, Crane Mill, and others. The parties to the plan agreed that it could be used as an acceptable alternative to the Wild and Scenic River designation for the McCloud River.

Bundle 3: Kilarc-Cow Creek

The Kilarc-Cow Creek Bundle includes one FERC-licensed project, the Kilarc-Cow Creek Project, located in rural Shasta County, southeast of Redding. Dispersed recreation is minimal, as most of the land surrounding this bundle is in private ownership. However, a large amount of developed recreation does occur in nearby local, State, and national recreation facilities. The lands within and surrounding FERC-licensed lands at the Kilarc-Cow Creek Bundle are gently sloped.

Kilarc-Cow Creek Project (FERC 0606)

The Kilarc-Cow Creek Project is in Shasta County near the rural communities of Whitmore and Millville. The Kilarc-Cow Creek project is located northwest of the Latour Demonstration State Forest and adjacent to Lassen National Forest.

Pacific Gas and Electric Company's land use in the Kilarc-Cow Creek Project area consists primarily of activities and structures associated with hydroelectric generation. Other uses within the FERC license boundaries of the Kilarc-Cow Creek Project include recreation, cattle grazing, and one lease for telecommunications purposes. The primary industries in the county are forest products, agriculture, and tourism.

Approximately 2,490 acres of Watershed Lands are in the Kilarc-Cow Creek Project. These Watershed Lands are in Shasta County near the rural communities of Whitmore and Millville and are northwest of the Latour Demonstration State Forest and adjacent to the Lassen National Forest. There are no recreational opportunities on these lands, as they are surrounded by private landholdings, through which access is unavailable.

Pacific Gas and Electric Company has issued permits for silvaculture, roads, telephone lines, and firebreaks and has entered into leases for livestock grazing on these Watershed Lands. These Watershed Lands contain 890 acres of land designated as TPZ, but no THPs.

Bundle 4: Battle Creek

The Battle Creek Bundle contains one FERC-licensed project, the Battle Creek Project. This bundle is located in southern Shasta and northern Tehema Counties, and straddles the county line between these jurisdictions. Most of the lands bordering this bundle are in private ownership, with the exception of lands to the east and southeast, which are managed by Lassen National Forest. Land use in the general vicinity of the Battle Creek Bundle includes recreation, both developed and dispersed, and timber management.

Battle Creek Project (FERC 1121)

The Battle Creek Project area is located in Shasta and Tehema Counties near the communities of Anderson, Paynes Creek, and Manton. The Battle Creek Project is located southwest of the Latour Demonstration State Forest and west of the Lassen National Forest. BLM lands are also in the vicinity of the Battle Creek Project.

Pacific Gas and Electric Company's land use in the Battle Creek Project area consists primarily of activities and structures associated with hydroelectric generation. The other use in the Battle Creek Project area is primarily recreational development by local non-profit organizations. Thirteen acres of project land have been developed at Macumber Reservoir by the Redding YMCA. The Willow Springs Resort is located primarily on non-project land near the South Powerhouse, approximately 500 feet from the Inskip Diversion Dam on the south bank of South Fork Battle Creek. Pacific Gas and Electric Company provides camping facilities at North Battle Creek and Macumber Reservoir. At Lake Grace and Lake Nora, Pacific Gas and Electric Company provides parking and picnic areas. Fishing, camping, and hiking comprise the bulk of recreational activities within the FERC license boundaries of the Battle Creek Project. There are two other improved recreation areas of regional or local significance nearby: Lassen Volcanic National Park and Thousand Lakes

Wilderness. Shingletown Rest Area, on SR 44, is a cooperative effort between Shasta Forests Company, Pacific Gas and Electric Company, and California Division of Highways.

Other land uses in the general vicinity of the Battle Creek Project include summer homes, timber production, cattle grazing, and fish hatchery production. The area surrounding the project has sparse commercial development. The Cross Country Canal flows by several residences, a school, and a gravel borrow pit in the town of Manton, located approximately three miles north of the South Powerhouse. A privately-owned fish hatchery is located along the Cross Country Canal, approximately one-half mile north of its junction with South Battle Creek Canal. Spring Gardens Fish Hatchery is along Eagle Canyon Canal, approximately 12 miles northeast of the Inskip Powerhouse. The Macon Springs Fish Hatchery is approximately 12 miles south of the powerhouse. The Darrah Springs State Fish Hatchery is about one-half mile east of the Asbury Pump. The Coleman National Fish Hatchery is located about one mile west of the Coleman Powerhouse. Several residential buildings are associated with each fish hatchery.

4.1.4.2 DeSabra Regional Bundle

This section gives an overview of uses associated with the land interests to be conveyed to the new owner(s) of Pacific Gas and Electric Company's hydroelectric facilities in the DeSabra Regional Bundle. It also describes the regulatory framework governing those land uses. The section then describes the land uses at specific FERC-licensed and non-FERC jurisdictional projects and discusses general plans or regulations that affect lands within the vicinity of the Pacific Gas and Electric Hydroelectric Projects.

Regional Setting

The DeSabra Regional Bundle is located in Northern California in the Sierra Nevada. The Central Valley forms the western boundary of the bundle area. Larger incorporated urban areas located in the vicinity of the bundle include the cities of Chico and Oroville, with populations of 55,400 and 12,650, respectively. The Town of Paradise is also located in the vicinity of project lands and hosts a population of 26,300. (Please refer to Section 4.10, Population, Employment, and Housing).

The DeSabra Regional Bundle consists of 52,910 acres of land including the five FERC-licensed projects, three non FERC-licensed projects, and associated service centers. Approximately 32,198 acres are FERC-licensed lands, including acreage lying under Pacific Gas and Electric reservoirs, and 20,712 acres are Watershed Lands. The acreage associated with the FERC-licensed land and Watershed Land is listed in Table 4.1-4 below.

Most of the Watershed Lands consist of remote and difficult to access open space that is wooded and on steep slopes. Access is often only available on single lane dirt roads. Exceptions include

Table 4.1-4 Acreage Summary for the DeSabra Regional Bundle

Project, Service Center, or Land Parcel	FERC License No.	FERC Land	Watershed Land	Total Acreage
Upper North Fork Feather River Project	2105	29,885	3,433	33,318
Bucks Creek Project	619	1,700	804	2,504
Rock Creek-Cresta Project	1962	96	3,056	3,152
Poe Project	2107	157	3,201	3,358
DeSabra-Centerville Project	803	360	2,190	2,550
Hamilton Branch Powerhouse	Exempt ^a	0	6,799	6,799
Lime Saddle Powerhouse	Exempt ^a	0	131	131
Coal Canyon Powerhouse	Exempt ^a	0	1,098	1,098
Rodgers Flat Hydro Service Center	N/A			
Camp 1 Hydro Service Center	N/A			
Total		32,198	20,712	52,910

a. These are non-FERC licensed facilities, and therefore do not contain FERC-license or Watershed Lands

Watershed Lands on the southwest side of Lake Oroville, and Watershed Lands including and immediately adjacent to Lake Almanor and Mountain Meadows Reservoir.

A majority of the Watershed Lands were acquired as part of Pacific Gas and Electric Company's acquisition of predecessor companies over the past 100 years. They do not contain hydroelectric generating facilities and are outside FERC project boundaries. The small portions within FERC boundaries contain linear project features that support certain hydroelectric facilities. Most of the Watershed Lands are undeveloped and difficult to access due to hilly and mountainous terrain. Limited access is provided by improved public roads or trails.

Pacific Gas and Electric Company has issued licenses or permits to or has entered into leases with third parties for limited types of activities or uses on these Watershed Lands, including recreational housing, livestock grazing, roads, recreation, utility lines, and telecommunications facilities. Pacific Gas and Electric Company also conducts timber management on the Watershed Lands, in accordance with State-approved THPs. Some lands on or near the Watershed Lands have current or historical mining associated with them.

Local Regulations and Policies

The DeSabra Regional Bundle is located in Butte, Plumas, Lassen, and Tehama Counties. The General Plan, Land Use Element and Zoning Maps from each of these jurisdictions provide the applicable land use designations and development policy.

The DOF estimated the Butte County population in January 2000 to be 204,000 resulting in a 1.9 percent increase from 1999. The DOF estimated the Plumas County population in January 2000

to be 20,350 resulting in a 0.2 percent increase from 1999. The DOF estimated the Lassen County population in January 2000 to be 33,950 resulting in a 1.6 percent increase from 1999. The DOF estimated the Tehema County population in January 2000 to be 56,200 resulting in a 1.8 percent increase from 1999 (refer to Section 4.1, Population, Employment, and Housing).

Plumas National Forest Land and Resource Management Plan

The Plumas National Forest LRMP (USFS, 1988) goals and policies relating to lands and land use are reviewed in the discussion of the Shasta Regional Bundle, under Local Plans and Policies.

Butte County General Plan and Zoning Code

The Butte County General Plan Land Use Element was adopted by the County Board of Supervisors in October 1979. The most recent comprehensive update of the Butte County General Plan was completed in March 1977. Since its adoption, the countywide plan has been supplemented and portions of it superseded by the subsequent adoption of topical general plan elements and area plans. The current Butte County General Plan consists of the following ten elements:

- Land Use (adopted October 1979, with revisions through 1991);
- Circulation (adopted May 1984, with a timeframe extending to 2000);
- Housing (revised element completed in January 1993);
- Conservation (adopted August 1971; in 1993, the County had a draft document prepared for Energy, Natural Resources, and Recreation Element - this document was not adopted as an element of the General Plan);
- Open Space (adopted December 1976);
- Noise, Safety and Seismic Safety Elements (adopted March 1977);
- Scenic Highways (adopted March 1977);
- Recreation (adopted August 1971); and
- Agriculture (adopted May 1995).

The intent of the Land Use Element is to present all of the significant problems and issues within Butte County including matters such as the general welfare of its citizens, population growth, intergovernmental coordination, and orderly development. Also included in the Land Use Element are policies pertaining to resource management, residential development, economic development, public facilities, environmental preservation, and natural hazards. Identified under each of these topic areas are related policies specifically addressing the concerns of Butte County. These policies as they pertain to Butte County and the DeSabra Regional Bundle are discussed in the corresponding environmental section of this document.

The Butte County General Plan (Butte County, 1996) policies pertaining to land use include:

- Providing for the health, safety and well being of the County's present and future residents;
- Planning for future development of all incorporated and unincorporated areas within the County's boundaries as well as consultation with neighboring counties in the development of planning proposals for areas of mutual concern;
- Planning for the future of the County, considering long-range factors and trends;

- Continued review of population trends within the County and designating adequate land to allow for population growth and economic development;
- Encourage public participation in development of land use proposals;
- Encourage intergovernmental coordination and the orderly development of the County;
- Maintaining quantity and quality of water resources;
- Supporting water development projects needed to supply local demands;
- Controlling development in areas to minimize erosion and water pollution;
- Preventing development and site clearance of marshes and significant riparian habitats;
- Minimizing the risk from flood hazards; and
- Limiting development that would increase sediment loads in prime fishing waters.

These policies assist in guiding County decision-makers in planning for the variety of resources within the County including agricultural and cropland, grazing land, timberland, water resources, air quality, mineral extraction, and energy resources. The Land Use policies also provide guidance with residential, commercial, industrial, agricultural and economic development within the County.

The Butte County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company lands (Butte County, 1999):

Table 4.1-5 Butte County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Timber Mountain	Timber Preserve Zone (TPZ)	Consistent with mandates of Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976. Timber management uses. One dwelling per 160 acres.
Grazing and Open Lands	Timber Management (TM) 1-40 acres	One single-family dwelling unit per parcel. Tree and crop farming. Prospecting, mining, and hydroelectric generating projects.
Timber Mountain	Commercial Forestry (C-F)	Management of land for the harvest of trees. Portable wood processing operations. Uses of natural resources wholly compatible with forestry operations including livestock grazing, beekeeping, prospecting and similar uses. Recreational uses not requiring permanent improvements. Hydroelectric generating projects of five megawatts or less.
Foothill Area Residential	Foothill Recreation 10-40 acres (FR)	One single-family dwelling, per parcel. Mining, quarrying, and commercial excavation. Pedestrian, equestrian and bicycle trails. Agricultural and forestry experimental areas. Hydroelectric generating projects of five megawatts or less.
Public-Recreation	Public, Quasi-Public (P)	Public schools. Public parks and public playgrounds. Publicly owned buildings and land. Public recreational areas. Public hospitals.
Public	Resource Conservation (R-C)	Natural, wilderness and study areas. Preservation of water resource areas. Agricultural uses, not including permanent dwellings. Keeping, raising and pasturing of livestock, not including feed yards. Establishment of archaeological and historical sites. Recreational uses not requiring permanent improvements.
Agricultural Residential	Unclassified (U)	One single-family dwelling, modular home, or mobile homes per parcel and accessory buildings. Agricultural uses and buildings. Small hydroelectric generating plants of five megawatts or less.

Plumas County General Plan and Zoning Code

The Plumas County General Plan was adopted in 1981, with subsequent amendments through 1997. The Land Use Element identifies the location of housing, business, industry, open space, public areas, public facilities, and areas subject to flooding. In addition, the General Plan identifies goals and directives for each of these topic areas.

The Plumas County General Plan goals include:

- Providing development opportunities while preserving the natural resources;
- Encouraging utilization of water for hydroelectric generation;
- Ensuring that hydraulic facilities protect constraint areas and off-site opportunity areas; and
- Minimizing the risk from flood hazards.

The land use designations and zoning classifications identified in the Plumas County Zoning Code for Pacific Gas and Electric Company land are shown in Table 4.1-6.

Lassen County General Plan and Zoning Code

The Lassen County General Plan was adopted by the Board of Supervisors in September 1999. The General Plan will serve as the fundamental plan for Lassen County until the year 2020, subject to periodic amendments and supplementation, which may be needed and warranted in the judgment of the Board of Supervisors.

The Land Use Element is organized into four sections which includes the introduction, goals and policies, descriptions of the land use designations, and a summary of the land use issues and background information relating to land use and development in the County. The Land Use Element identifies general land uses policies as well as land use issues that have evolved in the County over time. For each issue, a corresponding goal, policies, and implementation measures have been identified. Issues identified in the Land Use Element include the following: land use compatibility, growth and development, housing, neighborhood quality, transportation, commercial and industrial land uses, public services, agriculture and timberland, open space and public land, flood areas and hazards, wildlife habitat, and solid waste facilities. The basic land use issues (e.g., agriculture) are addressed in greater detail in other elements of the Lassen County General Plan and the appropriate sections of this document.

The Lassen County General Plan goals include:

- Strive to ensure compatibility between land use types.
- Recognize and clarify the applicability of area plans as operative components of the General Plan.
- Maintain consistency between the implementation of the Land Use Element and the goals and policies of related elements of the General Plan, which include natural resources, agriculture, wildlife, open space, circulation, and safety and seismic safety.

Table 4.1-6 Plumas County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Secondary Suburban	Secondary Suburban (S-1)	Dwellings at the ratio 1-3 acres per dwelling unit.
Secondary Suburban	Secondary Suburban (S-3)	Dwellings at the ratio 3-10 acres per dwelling unit.
Rural	Rural Zone (R-20)	Dwellings at the ratio 20 acres per dwelling unit.
Single-Family Residential	Single-Family Residential (3-R)	Dwellings at 3 per acre.
Prime Recreation	Recreation (Rec-1)	Dwellings (lodging facilities, marinas, postal services, recreation facilities, resorts) at the ratio 1-3 acres per dwelling unit.
Prime Recreation	Recreation (Rec-3)	Dwellings (lodging facilities, marinas, postal services, recreation facilities, resorts) at the ratio 3-10 acres per dwelling unit.
Prime Recreation	Recreation (Rec-OS)	Golf facilities, parks, grazing, horticulture, timber management, and boat ramps. Minimum net lot area shall be 8,500 square feet.
Important Timber	Timberland Production Zone (TPZ)	Consistent with mandates of Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976. Timber management uses. One dwelling per 160 acres.
Important Timber	General Forest (GF)	Important timber areas not in TPZ. One dwelling per 80 acres.
Prime Mining	Mining (M)	Mining, agriculture, timber management, hydroelectric generation, water impoundment, public utility facilities, animal breeding and boarding, and electric generation. One dwelling per 10 acres.
Prime Industrial	Industrial (I-1)	Assembly, building supply, manufacturing, electric generation, junkyards, salvage operations, heavy equipment services. Minimum net lot area is 10,000 square feet.
No specific corresponding General Plan designation	Special Plan Combining Zone - Scenic Area (SPSCa)	Adds additional regulations in designated scenic areas.
No specific corresponding General Plan designation	Humbug Valley	Adds additional standards and regulations for lands in the Humbug Valley.
No specific corresponding General Plan designation	Lake Almanor	Adds additional standards and regulations for lands around Lake Almanor.
No specific corresponding General Plan designation	Johnson Fields-North Causeway	Adds additional standards and regulations for lands for Johnson Fields-North Causeway area.
No specific corresponding General Plan designation	Feather River Canyon	Adds additional standards and regulations for lands for Feather River Canyon area.
No specific corresponding General Plan designation	Highway 70 Corridor	Adds additional standards and regulations 100 feet from the edge of the roadway either direction.

The Lassen County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-7 Lassen County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Grazing Land & Meadow Environment	Hydroelectric District (H-R)	Storing and releasing water for hydroelectric purposes. Hydro power plants. Preservation of wildlife habitat.
No specific corresponding General Plan designation	Upland Conservation/Resource Management (U-C-2)	Natural resources, agricultural land, grazing, hunting lodges, hydropower plants. Single-family dwellings, 80-acre minimum parcel size.

Tehema County General Plan and Zoning Code

Please refer to the Shasta Regional Bundle for a discussion of the Tehema County General Plan and Zoning Code.

Bundle 5: Hamilton Branch

Hamilton Branch Project (Non-FERC)

The Hamilton Branch Bundle is in Plumas and Lassen Counties and extends from Mountain Meadows Reservoir in the east to the Hamilton Branch Powerhouse on Lake Almanor in the west. Adjacent communities include Westwood and Clear Creek, and the town of Chester located approximately 15 miles to the west.

Lake Almanor is a significant regional and statewide recreation destination. Seasonal homes and commercial resort developments surround Lake Almanor (refer Section 4.6, Recreation, for additional information regarding Recreation resources). Population growth in the region is located primarily in the Lake Almanor vicinity. Within the community of Westwood, growth is modest. However, a mountain resort community is proposed for 6,000 acres of land southwest of Mountain Meadows Reservoir on land that is currently owned by Roseburg Resources. The potential development of a ski and golf resort, including homes, is currently part of a ballot initiative to allow commercial and residential development on acreage that currently produces timber and provides habitat for bald eagles, osprey, and willow flycatcher. If the ballot initiative passes, construction on the “Dyer Mountain Resort” could begin as soon as June 2001.

The Hamilton Branch Bundle consists of 6,799 acres of Watershed Lands, which includes the Mountain Meadows Reservoir, lands that closely contain water delivery systems to Lake Almanor, and lands containing the Hamilton Branch Powerhouse.

Pacific Gas and Electric Company’s land use in the Hamilton Branch Project area consists primarily of activities and structures associated with hydroelectric generation. Other uses in the Watershed Lands include rangeland, recreation, and water resource development. A grazing lease exists on State Board of equalization (SBE) No. 135-18-1B-1, a parcel on the northwest side of Mountain

Meadows Reservoir². Public access is allowed to Mountain Meadows Reservoir and adjoining lands for recreation, particularly hunting, hiking, and wildlife viewing. Sewage disposal ponds owned by the community of Westwood are adjacent to Mountain Meadows Reservoir. There are no THPs in the bundle.

In the area extending from Mountain Meadows Reservoir to the Hamilton Branch Powerhouse, residential development abuts Pacific Gas and Electric Company property at Hamilton Branch Diversion Dam and Clear Creek Diversion Dam. Land uses adjacent to the Hamilton Branch Project boundaries include residential development and a commercial resort. Mining also occurs in the vicinity of the powerhouse.

Bundle 6: Feather River

The Feather River Bundle includes three FERC-licensed projects: the North Fork Feather River (NFFR) Project (FERC 2105); the Rock Creek-Cresta Project (FERC 1962); and, the Poe Project (FERC 2107). All three of these projects utilize water from the NFFR and the East Branch North Fork Feather River, and are located in Plumas and Butte Counties. Quincy, Chester, and Westwood are the three largest communities in the vicinity of the bundle. In addition, smaller communities in the vicinity include Prattville, adjacent to Lake Almanor, and Belden and Storrie, along Highway 70. Generally, the population in the bundle is dispersed. The reservoirs and valleys associated with the FERC-licensed project lands, developed for hydroelectric generation, are established recreation and tourist destinations.

The bundle lies within the Sierra Nevada, sloping gently westward to the Sierra Nevada foothills. The west flank of the range is cut by the westward draining NFFR, which has incised a steep V-shaped canyon in the rocks that form the Sierra Nevada. Portions of the bundle are located adjacent to the Plumas and Lassen National Forests.

Upper North Fork Feather River Project (FERC 2105)

The NFFR Project operates on the NFFR and Butt Creek in Plumas County, predominantly on lands surrounded by lands managed by Plumas National Forest. A portion of land on the west side of Lake Almanor falls within the Lassen National Forest. The NFFR Project includes three reservoirs and four powerhouses, plus tunnels and penstocks for moving water, and various recreation facilities.

The lands associated with FERC 2105 include land surrounding the FERC-licensed facilities, Lake Almanor, Butt Valley Reservoir, and the North Fork Feather River Reservoirs, as well as Watershed Lands around Lake Almanor, Butt Valley Reservoir, and adjacent to the Caribou and Belden facilities near Belden on State Route (SR) 70. The Bucks Lake Wilderness Area of the

² Pacific Gas and Electric Company, 2000, Grazing Leases on FERC and Watershed Lands.

Plumas National Forest abuts the Belden Powerhouse, along SR 70. The NFFR Project area is characterized by gentle rolling slopes in the upper valleys and steep slopes near the river canyons.

Pacific Gas and Electric Company's land use in the FERC 2105 portion of the Feather River Bundle consists primarily of activities and structures associated with hydroelectric generation, including FERC mandated recreational uses. The uses of these Watershed Lands by third parties, as approved by Pacific Gas and Electric Company, reflect typical land uses in the area. A review of Pacific Gas and Electric Company's agreements and permits indicates that the following uses take place on these Watershed Lands:

- Recreational;
- Telecommunications;
- Rangeland and grazing;
- Roads building and maintenance activities;
- Buildings; and
- Recreational and water resource related.

Other uses in the project area historically have included timber management, rangeland, mineral extraction, and water resource development. There are no active grazing leases or THPs in FERC Project 2105.

Adjacent land uses are primarily based upon the water resources of Lake Almanor. Varying types of water-based recreation and tourism-related uses exist around Lake Almanor. Residential development is nearby and, in some cases, on Pacific Gas and Electric Company's land includes commercial resort development and second homes. Less commercial recreation opportunities exist around Butt Valley Reservoir. The adjacent communities of Prattville (seasonal population approximately 400) and Chester (population 2,500) have been slowly transforming into a tourist-based economy. The land between Lake Almanor and Butt Valley Reservoir is managed primarily by Plumas and Lassen National Forests. This land is being managed for "Visual Retention" in the Plumas National Forest and for "Developed Recreation" and "View/Timber" in the Lassen National Forest. The area around Lake Almanor, in the flatter sections of the valley, is owned by several private owners. In the steep forest lands surrounding Lake Almanor property ownership is primarily Collins Pine, Roseburg Resources, and Sierra Pacific Industries, all timber management companies. Land adjacent to the Watershed Lands and project facilities of Caribou and Belden is almost exclusively in Plumas National Forest.

FERC Project 2105 has 29,885 acres of FERC-licensed land, including acreage under Pacific Gas and Electric's reservoirs. This land is the area in and around Lake Almanor (up to the 4,510 contour), the area around Butt Valley Reservoir (up to the 4,180-foot contour), and the land immediately encircling hydroelectric facilities. Exceptions include a 60-acre area adjacent to Butt Valley Reservoir where the FERC-licensed Cool Springs Campground is located, a 260-acre area south of Canyon Dam on Lake Almanor, and a 90-acre parcel along the west side of Lake Almanor

including the town of Prattville. These lands are located around the north and southeast end of Lake Almanor, and the north and south end of Butt Valley Reservoir.

Approximately 33,318 acres of Watershed Lands exist in the FERC Project 2105. This land is located to the north and southeast of Lake Almanor, south of Prattville, along distribution facilities, on Caribou Road near Gansner Bar, and near the Belden Powerhouse. The land along the southeast shore of Lake Almanor has recently undergone selective logging, and is steeply sloped toward the lake. Two recreational homes, leased from Pacific Gas and Electric, exist in the vicinity of the Belden Powerhouse. The Watershed Lands on Caribou Road provide minimal access to this portion of the NFFR.

Rock Creek-Cresta (FERC 1962)

The Rock Creek-Cresta Project is located in portions of Plumas and Butte Counties. The hydroelectric facilities associated with the Rock Creek-Cresta Project are located along the NFFR. FERC-licensed land is located around these facilities as well as a sizeable portion of Watershed Lands, located in Humbug Valley along Yellow Creek.

The FERC-licensed land lies within Plumas National Forest and the Humbug Valley Watershed Land is adjacent to Lassen National Forest Land. The Bucks Lake Wilderness Area is immediately east and the Chips Creek Roadless Area is immediately west of the Rock Creek Reservoir. The project area is characterized by gentle rolling slopes in the upper valleys and steep slopes near the river canyons.

Pacific Gas and Electric Company's land use on the parcels in the FERC-licensed portion of the Rock Creek-Cresta Project consists primarily of activities and structures associated with hydroelectric generation. Livestock grazing is also conducted on the Watershed Lands in the Humbug Valley through a grazing lease³. There are no THPs associated with the Watershed Lands or FERC licensed Lands associated with the Rock Creek-Cresta Project. Pacific Gas and Electric Company has issued a permit to a private party for a road on these Watershed Lands. Pacific Gas and Electric Company has issued no other written leases, permits, or licenses associated with these Watershed Lands.

Adjacent land uses in the NFFR portion of the project area include transportation (both road and rail), timber production, outdoor recreation, and conservation of natural resources. Due to the rugged terrain, there are limited opportunities for additional intensive land use development.

Improvements to Pacific Gas and Electric Company's Humbug Valley land, currently leased for cattle grazing, include cattle guards, stream improvements, riparian plantings, and limits on grazing. In addition, Pacific Gas and Electric Company has provided a 10-unit campground on Yellow Creek. Yellow Creek in this area is part of the Wild Trout Project, a cooperative effort

³ Pacific Gas and Electric Company, 2000, Grazing Leases on FERC and Watershed Lands.

between Pacific Gas and Electric, California Department of Fish and Game (CDFG), and others, to prevent erosion and grazing damage to the creek banks by providing exclusionary fencing. Just north of the campground is the Soda Springs Historical Site. Pacific Gas and Electric Company must submit a general resource management plan within three years of receiving a new license for the Rock Creek-Cresta Project. An application for a new license is pending before FERC. The application addresses improvements to aquatic and riparian habitat, minimization of consumptive water use on grazing lands, minimization of erosion and sediment transport, evaluation of continuing grazing leases, and recommendations for best use of the existing resources. The mitigation work would be performed on property outside of the existing FERC boundary. These lands could be incorporated into the FERC boundary upon issuance of a new license. Adjacent land uses in the Humbug Valley include livestock grazing and recreation.

FERC Project 1962 has approximately 96 acres of FERC-licensed land. In this bundle, FERC-licensed land closely follows the extent of the hydroelectric facilities. Facilities include Rock Creek Reservoir, Dam, and Powerhouse, Cresta Dam, and Powerhouse, and the tunnels serving the penstocks.

Approximately 3,056 acres of Watershed Lands exist in the FERC Project 1962. These lands are located in the same section as the Cresta Powerhouse, along the steep slopes of the Feather River Canyon. The steepness of these slopes precludes land uses such as recreation or development.

Poe (FERC 2107)

The Poe Project is located in Butte County. The hydroelectric facilities associated with the Poe Project are located along the North Fork Feather River Canyon. FERC-licensed land is located around these facilities and along the tunnel to the west of the North Fork Feather River. Considerable Watershed Lands are associated with the Poe Project. These lands are located within the Feather River Canyon and continue, generally following transmissions lines, to Lake Oroville. The Poe Project area is characterized by steep slopes near the river canyons and rugged foothills near Lake Oroville. The area surrounding the Poe Project is sparsely populated with no industrial or commercial development.

Pacific Gas and Electric Company's land use in the FERC-licensed portion of the Poe Project consists primarily of activities and structures associated with hydroelectric generation. There are no active THPs on the Watershed Lands or FERC-licensed lands associated with the Poe Project. Pacific Gas and Electric Company has issued permits for water use, livestock grazing and telephone lines, and licenses for cabins and livestock grazing on the Watershed Lands associated with the Poe Project. There are no developed recreational facilities within the FERC boundaries of the Poe Project, although informal recreation in the form of fishing and swimming in the NFFR occurs along pullouts located along SR 70. Pacific Gas and Electric Company's Poe Project roads can also provide access to fishing and swimming opportunities on the NFFR.

Adjacent land uses in the North Fork Feather portion of the Poe Project area include transportation (both road and rail), timber production, outdoor recreation, and conservation of natural resources. Due to the rugged terrain, there are limited opportunities for additional intensive land use development. Adjacent land uses in the Poe Powerhouse Area are rural residential and timber management.

FERC Project 2107 has approximately 157 acres of FERC-licensed land. This land is minimal, primarily consisting of the Poe Reservoir and the access road to the Poe Powerhouse.

Approximately 3,201 acres of Watershed Lands exist in the FERC Project 2107. A relatively small (70-acre) piece is located between Poe Dam and the Poe Powerhouse in the Feather River Canyon. A larger group of landholdings is located south of Poe Powerhouse to the shores of Lake Oroville. A more removed piece of land near Frazier Creek is also grouped with the Poe Project Watershed Lands.

Bundle 7: Bucks Creek

The Bucks Creek Bundle contains one FERC-licensed project, the Bucks Creek Project, located in Plumas County about ten miles south of Belden, in the northern Sierra Nevada. The largest community in the general vicinity of this bundle is the unincorporated town of Quincy (population 5,000). Largely surrounded by pine and fir forests, and somewhat remote from railroads and highways, the area is attractive for recreation purposes. There is one wilderness area in proximity to this bundle. Bucks Lake Wilderness Area is located in the northwestern portion of Plumas National Forest. The PCT runs through the wilderness area.

Bucks Creek Project (FERC 0619)

The Bucks Creek Project FERC 0619 is in Plumas County centrally located by Bucks Lake. The project occupies Plumas National Forest lands on the western slope of the Sierra Nevada. Bucks Lake is located at an elevation of 5,000 feet, east of the NFFR. FERC-licensed land is located around these facilities and along the tunnels and flumes connecting the reservoirs to the powerhouses. The project area is characterized by steep slopes near the river canyons and relatively rugged mountainous land around the project reservoirs. The area immediately surrounding the project is sparsely populated. The City of Oroville (population 12,650) is the largest population center to Bucks Lake, approximately 40 miles to the southwest. The Town of Quincy is located 17 miles northeast of Bucks Lake.

Pacific Gas and Electric Company's land use on the FERC-licensed portion of the Bucks Creek Project, consists of activities and structures associated with hydroelectric generation and recreation. Recreation accommodations range from primitive camping to resorts and summer homes. These facilities, primarily within the FERC-licensed land, have been developed according to Exhibit R, Recreational Use Plan (PG&E Co., 1975). There are no THPs or grazing leases on these lands.

Most public use at the project occurs at Bucks Lake, Lower Bucks Lake, and Grizzly Forebay, with a minor amount occurring at Three Lakes. Fishing, camping, boating, hiking, sightseeing, hunting, snowmobiling, and cross-country skiing are the principal activities. The variety of facilities available in the Bucks Creek Project area include private cabins, private lodges, campgrounds, and day-use areas operated and maintained by the USFS or by Pacific Gas and Electric Company. Commercial activities occurring on Bucks Lake include boat and horse rentals, convenience shopping stores, and nightly lodging.

Adjacent land uses in the Bucks Lake Project area include transportation (road and rail), timber production, outdoor recreation, and conservation of natural resources. Mining occurs in the vicinity of the project. Due to the rugged terrain, there are limited opportunities for additional intensive land use development.

A Memorandum of Agreement (MOA) between Pacific Gas and Electric Company, the City of Santa Clara, and the USFS includes the use of Pacific Gas and Electric Company lands for a USFS visitor contact point.

FERC Project 0619 has approximately 1,700 acres of FERC-licensed land. This land is essentially the Bucks Lake Reservoir including considerable land beyond the water line on the south side of the lake.

Watershed Lands are located along the south shore of Bucks Lake, in a few isolated areas on the west and east shores of the lake, and within the NFFR canyon. These lands are on the steep slopes of the Feather River Canyon, and do not provide recreational opportunities or have development potential.

Bundle 8: Butte Creek

The Butte Creek Bundle contains one FERC-licensed project, the DeSabra-Centerville Project, and two non-FERC jurisdictional projects, the Lime Saddle Powerhouse Project and the Coal Canyon Powerhouse Project. All three projects are located in Butte County, with the exception of one parcel of Pacific Gas and Electricity Company Watershed Land that is located in Tehema County. The largest communities in the general vicinity of the Butte Creek Bundle are the cities of Chico and Oroville. The landform of the Butte Creek Bundle is generally characterized by flatter valley lands and the volcanic butte topography of Butte Creek Canyon.

DeSabra-Centerville (FERC 0803)

The DeSabra-Centerville FERC Project 803 is in Butte County, approximately seven miles northeast of the Town of Paradise. The Greater Chico Urban Area (approximately 100,000) is the closest population center to the Butte Creek Bundle. The DeSabra-Centerville Project is adjacent to Lassen National Forest lands on the western slope of the Sierra Nevada. The hydroelectric facilities associated with the DeSabra-Centerville Project are located within the canyon of upper

Butte Creek, and in high elevation reservoirs in northernmost Butte County. FERC-licensed land is located around these facilities and along the tunnels and flumes connecting the reservoirs to the powerhouses. The area surrounding the DeSabra-Centerville Project is sparsely populated.

Pacific Gas and Electricity Company's land use in the DeSabra-Centerville Project area consists primarily of activities and structures associated with hydroelectric generation, including recreation. There are no active THPs or grazing leases on these lands.

Adjacent uses in the DeSabra-Centerville Project area include grazing, timber management, rural-residential development and hydroelectric development. There are several small cattle ranches near the DeSabra-Centerville Project. Except for the seasonal open range grazing in the north of the land use study area, most ranching is in the southern portion.

Butte County residents have historically used the reservoirs and flumes associated with the DeSabra-Centerville Project for recreation. Camping, fishing, and boating activities are concentrated at Philbrook Reservoir where camping, picnic, and boat launching facilities and a trout fishery are available to the public. DeSabra Forebay provides additional fishing and picnicking opportunities for the public. Fishing is the principal activity occurring on the DeSabra-Centerville Project canals. In some cases, these canals serve as trailways for biking and hiking. In addition to these uses, there has historically been gold mining in the vicinity of the project at the Carr Mine, located approximately two miles east of Philbrook Reservoir, and the Orofino and Indian Springs Mines.

FERC Project 0803 includes approximately 360 acres of FERC-licensed land. This land contains the DeSabra-Centerville Project facilities such as roads, ditches or canals, reservoirs, and power generating facilities. Most of this land is located along the steep canyon walls of Butte Creek.

Watershed Lands contiguous to FERC boundaries are located along the steep canyon walls of Butte Creek and around the Toadtown Powerhouse and the Diversion Dam on Upper Butte Creek. There are three Pacific Gas and Electricity Company parcels that are more removed from the FERC-licensed area. Two of these parcels are located adjacent to FERC Land in Butte Creek Canyon. These parcels are on steep canyon walls and have difficult ground accessibility. The third is located in Tehema County along Deer Creek. This property is remote, accessible only via a ten-mile dirt road, though it is known to provide some dispersed recreational opportunities.

Approximately 2,550 acres of Watershed Lands are in the DeSabra-Centerville Project. The Watershed Lands associated with the DeSabra-Centerville Project are primarily in Butte County, approximately three to six miles north of the Town of Paradise. A single parcel of Watershed Land lies in Tehema County, approximately seven miles northwest of the Watershed Lands that are in Butte County.

Lime Saddle Powerhouse (Non-FERC)

The Lime Saddle Powerhouse is in Butte County near Oroville and adjacent to State and BLM lands.

Pacific Gas and Electricity Company's land use in the Lime Saddle Powerhouse Project area consists primarily of activities and structures associated with hydroelectric generation. Recreation also occurs at Camp Parrish on Lake Oroville. There are no THPs or grazing leases associated with these lands.

Other uses in the area of the powerhouse include some industrial and commercial development. Areas surrounding the powerhouse are wooded and have moderate to steep relief. Waterways, including tributaries to the West Branch Feather River, are located throughout the area. Small residential communities and isolated residential properties are located in the vicinity.

The Lime Saddle Project is a non-FERC licensed facility, therefore, there are no FERC-licensed lands associated with the Lime Saddle Powerhouse and Knuckle Reservoir.

Watershed lands are located along the finger of Lake Oroville where it meets the West Branch Feather River. These lands total 131 acres.

Coal Canyon (Non-FERC)

The Coal Canyon Powerhouse is in Butte County near Oroville. The Watershed Lands associated with Coal Canyon are located on either side of the Lake Oroville Diversion Pool. Approximately 1,098 acres of Watershed Lands are in the Coal Canyon Powerhouse Project.

Pacific Gas and Electricity Company's land use in the Coal Canyon Project area consists primarily of activities and structures associated with hydroelectric generation. There are no THPs associated with the Watershed Lands. Pacific Gas and Electricity Company has issued permits for telephone lines; licenses for grazing (grazing lease on SBE 135-4-65G-1); an agreement for fence construction; and a right-of-entry to the State of California Department of Water Resources for activities related to the Oroville Dam.

In the vicinity of the powerhouse mining is an adjacent land use activity. The area surrounding the powerhouse is sparsely populated. Significant recreation occurs on Lake Oroville and on adjacent lands. Residential uses occur on the south side of the Lake Oroville Diversion Pool. No major waterways are located in the vicinity.

The Coal Canyon Project is a non-FERC licensed facility, therefore, there are no FERC Lands associated with the Coal Canyon Powerhouse.

4.1.4.3 Drum Regional Bundle

This section provides an overview of uses associated with the land interests to be conveyed to the new owners of Pacific Gas and Electricity Company's hydroelectric facilities in the Drum Regional Bundle. It also describes the planned land uses and the regulatory framework governing those land uses. The section then describes the existing land uses at specific projects and discusses general plans or regulations that affect lands within the vicinity of the projects.

Regional Setting

Table 4.1-8 provides an estimate of the acreage included in the land interests that will be conveyed to the new owner(s) of the facilities in the Drum Regional Bundle.

Table 4.1-8 Acreage Summary for the Drum Regional Bundle

Project, Service Center, or Land Parcel	FERC License No.	FERC Acreage	Watershed Acreage	Total Acreage
South Yuba-Bear River	2310	3,515	15,022	18,537
North Yuba River: Narrows	1403	23	41	64
Chili Bar	2155	193	32	225
Potter Valley	77	2,285	5,097	7,382
Alta Hydro Service Center ^a	N/A			1
Bear Valley Service Center	N/A			N/A
Rock Creek Yard Service Center	N/A			N/A
Total		6,016	20,912	26,209

- a. The Alta Hydro Service Center is located in Placer County near State Highway 49 on Bonnie Nook Road in the unincorporated town of Alta. Pacific Gas and Electric Company's land use at the 1.15-acre parcel consists of crew assembly, shop work, and vehicle fueling.

The Drum Regional Bundle is located within the counties of Placer, Nevada, and El Dorado, which contain the majority of Project Lands. A portion of the regional bundle is located within Mendocino and Lake Counties. Much of the project lands within this regional bundle are located in sparsely populated areas. Urban areas located in the vicinity of this bundle include Auburn, Chicago Park, and the cities of Auburn and Ukiah. Placer County is the most populated (209,700 in 1997 and 301,900 by 2010) of the counties within the bundle, and contains the majority of project lands.

The Drum Regional Bundle consists of a total of 26,209 acres, 22,440 acres of which are actual land including the four FERC-licensed projects. The remaining bundle acreage of 3,769 acres lie under Pacific Gas and Electricity reservoirs. Table 4.1-8 provides acreage associated with the Drum Regional Bundle.

The majority of the Project Lands are located in remote areas and are difficult to access due to steep topography, or the heavily forested nature of the lands. However, Project Lands located in

Placer and Nevada Counties that are in close proximity to Interstate 80 and urban centers such as Auburn are easily accessible.

About 1,374 acres of Project Lands are located within FERC Licensed Areas. The remainder of Project Lands are Watershed Lands, do not contain hydroelectric generating facilities, and are outside FERC project boundaries.

Predominant current land uses occurring on the Project Lands of this regional bundle include forestry and timber harvesting, agriculture, recreation, utility lines, and telecommunications facilities.

Local Regulations and Policies

Tahoe National Forest

Tahoe National Forest offers visitors a wide range of activities to choose from. The 1,500 to 9,400-foot elevation range provides a variety of year-round recreational activities. The Tahoe National Forest offers over 800 miles of trails for use by hikers, backpackers, mountain bikers, equestrians and off-highway vehicles. Trails are designated for specific activities. Standards and guidelines in the Forest Plan direct how to protect and enhance wildlife habitats when planning projects. Tahoe is committed to maintaining viable, self-sustaining populations of all native species of fish and wildlife. The Forest Fish and Wildlife Habitat Management Program of the Forest Plan establishes procedures and prioritizes programs.

Eldorado National Forest

Eldorado National Forest has more than 50 developed campgrounds, lakes, rivers, and canyons that provide recreation in the form of winter sports, water sports, picnicking, hiking, camping, boating, fishing, hunting, photography, and nature study. The goals and objectives of Eldorado National Forest comply with the Eldorado Forest Plan. Following are Eldorado National Forest guidelines applicable to the proposed project:

- Recreation will provide a wide range of developed and dispersed recreational opportunities that meet projected demand at the end of the planning period. Public uses take priority over uses of a semi-public nature, and these in turn take priority over private uses. Stress simpler, more natural recreation experiences over dense, sophisticated developments.
- Maintain a lasting system of quality wilderness for public use and appreciation of the unique characteristics of wilderness, consistent with preserving its values;
- Sustain a long-term yield of logs and other wood products by practicing the most intensive forms of timber management on the most productive sites. Increase this yield by application of high utilization standards and scientific silvicultural growth techniques;
- Build and maintain fire and other facilities to serve resources, and support program needs. Make them functional, energy efficient, and attractive to the public. Remove or replace unsafe and obsolete facilities;

- Seek optimum landownership patterns by means of land adjustment in order to reduce problems related to intermingled private lands; and
- Cooperate and participate with mineral leasees, claimants and permittees in the development of mineral resources under the laws and regulations that govern them. Develop and maintain a material source inventory for Forest uses.

Mendocino National Forest

Mendocino National Forest is divided into four Ranger districts: Stonyford, Corning, Upper Lake, and Covelo. The forest is an essential source of water for recreational users of the forests' lakes, rivers, and streams, and for cities, towns, farms, and ranches. The forests' open grasslands and trees are natural resources used for timber production and livestock grazing. The USFS manages the forests' wide range of natural resources for the recreational opportunities it provides, for the habitat of its many species of wildlife and fish, and for the production of wood, water, and livestock forage. Wilderness areas are managed by the USFS to be free from human impact. Trails are kept to a minimum; access is by foot or pack stock only. No mechanical vehicles or motorized equipment are allowed in any wilderness areas. All public lands in the Mendocino National Forest are open to hunting with the exception of the State Game Refuge. Visitors may use firearms if they carry and use them according to State and county laws.

Placer County General Plan and Zoning

The Placer County General Plan describes the assumptions, goals and planning principals that provide a broad framework for land use decisions in the unincorporated county. The plan is based on the premise that there will be continued growth and economic development in Placer County, because of a desirable climate and attractive physical setting, the proximity of the Sacramento metropolitan area, and plentiful resources. The plan further acknowledges that in order to accommodate the anticipated growth, public services and recreation opportunities will need to be expanded.

Applicable planning principles include:

- A balance should be encouraged between jobs and labor force;
- Residential densities should decrease as a function of distance from urban areas;
- Compact and diverse business areas should be established that are easily accessible from primary transportation routes; and
- Industrial areas should be located on large tracts of land near transportation facilities, and insulated from conflicting uses.

The implementation section includes "assignments for plan effectuation", that encourage coordination of development policies, the promotion of industrial development, and the provision of public services.

The Placer County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electricity Company land:

Table 4.1-9 Placer County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Forestry	Forestry (FOR)	Designates portions of the mountainous areas of the county where the primary land uses will relate to growing and harvesting of timber and other forest products, together with public and commercial recreation uses.
Timber Croplands	Timber Preserve Zone (TPZ)	Exclusive area for growing and harvesting timber and those uses that are an integral part of timber management operations. Land use under TPZ will be restricted for a minimum of 10 years to growing and harvesting timber. 160-acre minimum.
Forest Recreation	RF	Recreation and Forestry
Rural Residential	F-R	Forest-Residential
Agriculture	F	Farm
Commercial	C1-Dh; C2-Dc	Neighborhood Commercial Combining Designed Historical; General Commercial Combining Design Scenic Corridor
Ag/Ranchette	RA	Residential Agriculture
Low Density Residential	ULDR; R1	Urban Low Density Residential; Single-Family Residential
Industrial	INP-Dc	Industrial Park Combining Design Scenic Corridor

B-X = Minimum Building size as indicated

B = Combining Building

Nevada County General Plan and Zoning

The Nevada County General Plan describes the assumptions, goals and planning principals that provide a broad framework for land use decisions in the unincorporated county. The plan is based on the premise that there will be continued growth and economic development in Nevada County, because of a desirable climate and attractive physical setting, the proximity of the Sacramento metropolitan area, and plentiful resources. As part of the development of the Nevada County General Plan, the County identified a vision of future growth. The Central and Supporting Themes were developed to assist and guide the preparation of the goals, objectives, and policies of the General Plan. In addition to those themes, the General Plan also identified planning principles to guide the development of the Community and Rural Regions.

- Within the Rural Regions, growth is limited to those types and densities of development which are consistent with the open, rural lifestyle, pastoral character, and natural setting and surrounding land use patterns which exists in these areas. Within the Community Regions, balanced growth is encouraged to provide managed housing, employment, shopping, and cultural opportunities appropriate to each community, located for convenience, efficiency and affordability;
- The County will review innovative land use measures that promote the preservation of open space and environmentally sensitive areas;
- Uses for Planned Developments shall be permitted as shown on the General Plan Land Use Maps for each specific Planned Development designation;
- Encourage land use patterns which minimize use of the automobile and allow for viable alternative transportation modes;
- Designate a diversified compatible mix of land uses in close proximity to residential uses;

- Establish a land use pattern which provides for open space, environmentally sensitive land, resource management areas and appropriate transitions;
- Provide land uses which protect, enhance, and complement existing communities and neighborhoods;
- Direct development to areas that can create the opportunity to provide acceptable levels of public facilities and services;
- Integrate open space consideration in the establishment of land use patterns;
- The County may utilize clustering of development, as provided in the Land Use policies, to preserve open space within the Rural Regions and to encourage creation of open space which will enhance visual, habitat and other open space values;
- Development standards for project design, grading, construction and use, established through the Comprehensive Site Development Standards, shall be used in project review of all discretionary project permits to determine open space requirements for each project;
- Agriculture is strongly encouraged in Rural Regions and allowed in Community Regions. Agricultural land shall include all those land areas of Nevada County now used for agricultural operations, or upon which agricultural operations may be established in the future in conformance with applicable zoning regulations; and
- Clustering on new residential development in Rural Regions shall be encouraged and utilized to reduce potential conflicts between agricultural operations.

The Nevada County Zoning Code identifies the following land use designations and zoning classifications for Pacific Gas and Electricity Company land:

Table 4.1-10 Nevada County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
N/A	Forestry (F)	U.S. Forest Service Lands
N/A	Timberland Preserve Zone (TPZ)	Provides for timberland zoning and restrictions to encourage prudent and responsible forest resource management
N/A	Forest and Recreation (FR)	Provides for low intensity uses that preserve forested areas; promotes tourism
N/A	Single-Family Residential (R1)	Single-residential with accessory uses
N/A	General Agricultural (AG)	Allows general farming, low intensity uses and open space. Single-family residences permitted
N/A	Open Space (OS)	Provides for adequate open space (most commonly applied to State or BLM lands)
N/A	Water (WA)	Water
N/A	SC (Scenic Corridor)	Applied to areas adjacent to roads and highways to recognize scenic highways.

El Dorado County General Plan and Zoning

The California Supreme Court nullified the El Dorado County's 1996 General Plan Update because it allowed for too much growth and development density. The EIR on El Dorado County's 1996 General Plan Update was successfully challenged. The County is currently in the process of

preparing additional analyses and revisions to the General Plan Update to accommodate the specific deficiencies in the EIR and General Plan identified by the court. In addition, the voters of El Dorado County recently passed an initiative entitled “Measure Y.” This measure is intended to ensure that the levels of service for roadways within El Dorado County are maintained in the face of substantial future planned development. Implementation of this measure and pending revisions to the General Plan directly influence the extent and nature of future development in the county.

Following are applicable land use policies from the General Plan:

- Protection and conservation of existing communities and rural centers;
- Creation of new sustainable communities;
- Curtailment of urban and suburban sprawl;
- Location and intensity of future development consistent with the availability of adequate infrastructure;
- Mixed and balanced use that promote use of alternate transportation systems;
- A set of land use designation, which provide the maintenance of the rural and open character of the County and maintenance of the rural and open character of the County and maintenance of high standard of environmental quality;
- Maintain the characteristic natural landscape features unique to each area of the county;
- Maintain and enhance the character of existing rural and urban communities, emphasizing both the natural setting and built design elements, which contribute to the quality of life, economic health, and community pride of the residents;
- Carefully plan communities incorporating visual elements, which enhance and maintain the rural character and promote a sense of community; and
- Designate lands to provide greater opportunities for residents to shop within the county.

It should be noted that these policies cannot be implemented until the status of the County’s General Plan is determined.

The El Dorado County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electricity Company land:

Table 4.1-11 El Dorado County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Natural Resources	Natural Resources (NR)	160-acre minimum
Non-Jurisdictional	Non-Jurisdictional (NJ); Public Lands (PL)	Not within jurisdiction
Agricultural District	Residential Agriculture (RA); Rural Residential (RR)	40-acre minimum
Mineral Resource	Mineral Resource (MR)	Mineral Resources
Unclassified	Unclassified (U)	N/A

Mendocino County General Plan and Zoning

Mendocino County seeks to protect its diverse natural resources which provide opportunities for fisheries enhancement through habitat clearance, and watershed rehabilitation; for improvement of

the quality and productivity of its forests; and for the protection of agricultural productivity by adopting favorable land use and water policies. Applicable policies include:

- Protect and maintain prime agricultural land and prime range land;
- Minimize the conflicts between agricultural operations and other land and resource uses;
- Create and promote those policies and conditions that will enable Mendocino County ranchers, farmers, and homesteaders to maintain economically sound and profitable operations;
- Maintain prime range land in units sufficient to provide for an economic management base;
- Protect and maintain natural vegetation and wildlife;
- Actively support energy conservation and the use of local renewable energy sources, which are environmentally sound;
- Make energy efficiency a major consideration in its land use and transportation planning decisions;
- Achieve and maintain optimum natural production of Salmon and steelhead in each Mendocino County Watershed;
- Protect and maintain commercial timberland, to make optimum use of its timber resources over the long term, consistent with other resource values; and
- Minimize the conflicts between timber harvesting operations and other land and resource uses.

The Mendocino County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electricity Company land:

Table 4.1-12 Mendocino County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Forest Land District	Forest Land (FL); Timber Preserve (TP); 160-acre minimum Agricultural (AG); 40-acre minimum	Areas suited for growing, harvesting and production of timber and related products
Public Facilities District	Public Facilities (PF); Public Service (PS)	Properties used for or proposed to be used for public purposes or for specified public utility purposes
General Industrial District	Industrial (I)	Industrial uses with moderate to high nuisance characteristics

Lake County General Plan and Zoning

Lake County seeks to preserve and maintain the County's valuable agricultural lands, protect, manage, and develop forestry resources, forest lands, and mineral resources, to preserve and protect environmentally sensitive significant lands and waters valuable for their plant and animal habitat, and natural appearance and character, and to manage and protect sites of cultural and archaeological importance for the benefit of present and future generations. Relevant policies of the Lake County General Plan include:

- Encourage the preservation of agricultural lands, both those in production and those with potential productivity. Non-agricultural development should be directed onto marginal agricultural lands. Land uses in areas designated for intensive agriculture should be limited to agriculture and uses necessary for the support of agriculture. Extension of services, such as sewer and water lines and roadways, into areas preserved for agriculture should be avoided. Whenever possible, non-agricultural development should be separated from agricultural lands by buffers or transitional areas sufficient to mitigate potential land use conflicts;

4.1 Land Use

- Discourage the parcelization of land within designated agricultural areas, which divides land into units too small to economically support a viable agricultural operation and which contributes to the transition of agricultural lands to non-agricultural uses. When feasible, the recombining of agricultural parcels to make economic farm units should be encouraged;
- Continue to support programs of agricultural technical assistance and should cooperate with public and private groups to promote economic development of agricultural areas;
- Place qualifying forest lands in Timberland Preserve Zones and encourage the development of forest lands with potential for timber production in a manner that will not preclude future forest activities. Compatible development includes outdoor recreation activities, agriculture, rangeland, wildlife habitat, watershed, and campgrounds. Activities permitted in forest lands should be carried out in an orderly manner that preserves soils, public safety, high water quality, and watershed functions;
- Promote wood fuel production to stimulate the local economy and to offer an alternative energy source;
- Encourage the planned management of its valuable mineral deposits, geothermal resources, and construction materials, such as sand and gravel;
- Support the regulation of mineral extraction activities to minimize hazards and conflicts with existing land uses and sensitive natural resources; and
- Encourage the protection and restoration of the appearance and ecological/economic value of mineral extraction areas, particularly in areas also suitable for groundwater recharge and wildlife habitat. Creek management and reclamation plans should address, where appropriate, the protection and restoration of vegetation, wildlife, watershed, groundwater, range and forage lands. The development of lands surrounding existing or potential mineral extraction sites should be carefully reviewed to minimize the impacts of the proposed development on extraction activities. Low intensity activities such as agriculture, outdoor recreation, and rural land development, or forestry would be appropriate. In known groundwater recharge areas, the predominant land use should be one that allows the continued recharge of the groundwater basin. Clustered development should be encouraged to promote open space and maintain infiltration.

The Lake County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-13 Lake County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Rural Residential	Rural Residential (RR-B3)	Single-family residential development in a semi-rural setting. Large lot residential development with small-scale agricultural activities is appropriate. One dwelling unit per 5-20 acres.

Yuba County General Plan and Zoning

The objectives of the General Plan are to expand future growth and development that would result in any economic activity. Growth is expected to create new opportunities for improvement and diversification of the economy, preservation and enhancement of the environment and provision of better and more affordable housing. The goals, objectives, policies, and implementation strategies of the Yuba County General Plan seeks to preserve and create a variety of residential living

environments, utilizing existing communities and approved specific and community plan areas as the focal point for growth and development. The General Plan seeks to:

- Retain the most productive agricultural lands in agriculture use, and clearly define areas suitable for urbanization and other forms of non-agricultural development;
- Assure that necessary infrastructure and public services are available to serve present and future residents;
- Create and maintain convenient and centrally located commercial areas and employment centers, while providing adequate sites for an expanded industrial base;
- Assure that land uses located in proximity to one another are compatible, and that the appearance of development is pleasing and compatible with its surroundings;
- Preserve open space, which is physically accessible to the public, as development occurs;
- Diversify and expand the local economy, including promotion of recreation and tourism, while retaining the benefit of growth locally;
- Maintain a close working relationship; facilitate development patterns around cities, which are compatible with the city, county, and base plans and policies;
- Cooperate with surrounding counties to solve problems of regional significance. Achieve jobs and a housing balance within Yuba County while promoting housing developments in all area of the county, which is affordable and available to all economic and cultural groups;
- Remove blighting conditions and reduce poverty and crime in existing communities;
- Design new development projects in a manner conducive to a safe living environment, including protection from crime, fire, and geologic hazards;
- Protect and enhance Beale Air Force Base; and
- Secure adequate flood protection for urban and other developing areas.

The Yuba County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electricity Company land:

Table 4.1-14 Yuba County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Foothill Agriculture	Recreation Zone (RZ)	Parks and recreation facilities for day use only (excluding recreational vehicle and trailer parks and amusement parks); riding clubs, golf courses; and country clubs; 40-acre minimum

Bundle 9: North Yuba River

The North Yuba Bundle includes one FERC-licensed project, the Narrows Project. Narrows is located below Englebright Dam on the Yuba River in Yuba County. The project area is located about 20 miles east of Marysville. Englebright Dam is under the jurisdiction of the U.S. Army

Corps of Engineers. Recreational activities associated with the project vicinity include fishing, water-skiing, jet skiing, camping, and picnicking.

Narrows (FERC 1403)

The Narrows Project is in a relatively undeveloped area straddling Nevada and Yuba Counties, approximately 12 miles west of Grass Valley. U.S. Army Corps of Engineers, BLM, and private entities own the surrounding lands.

Pacific Gas and Electricity Company's land use in the project area consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area include recreation and open space. All lands adjacent to and including the project are designated for low-intensity uses, such as agriculture, recreation, and open space.

Bundle 10: Potter Valley

The Potter Valley Bundle contains one FERC-licensed project, the Potter Valley Project. This bundle is located in Mendocino County, between the Coast Range Mountains in Lake County and Potter Valley, an open inter-mountain agricultural valley. The closest communities are Potter Valley, located about four miles from the Potter Valley powerhouse and about 12 miles from Lake Pillsbury. Land uses include timber harvest, grazing, ranching, rural residential, rural community, resort, intensive agriculture, and developed and dispersed recreation. The upstream portions of the bundle contain an area of overlapping Mendocino National Forest lands and private lands under the jurisdiction of Lake County. In the downstream portion of the project, Mendocino County has jurisdiction over land in private ownership. Recreational activities in the project vicinity include general reservoir use, general forest use, dispersed recreation, water-contact in streams and lakes, whitewater boating, stream and lake angling, resort use, off-highway vehicles (OHV), hiking, biking, day-use and camping.

Potter Valley (FERC 0077)

The Potter Valley Project is in a sparsely populated portion of Mendocino and Lake Counties in the coastal mountains of northern California approximately five miles north of the community of Potter Valley. Most of the land in the immediate vicinity of the project is undeveloped and is either privately owned or is part of the Mendocino National Forest. The BLM administers approximately 640 acres west of the project area. Substantial acreages of land in the Mendocino National Forest are also located north and east of the project area.

Pacific Gas and Electric Company's land use in the project area consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area include timber production and grazing. The area around Lake Pillsbury is used heavily for recreation, and Pacific Gas and Electric Company operates and maintains several developed campgrounds around the lake. Development around the community of Potter Valley is predominantly residential, with about 10

businesses, governmental offices, and other institutions. There are some scattered rural residences located on one-acre or larger parcels of land in the vicinity of the project.

Bundle 11: South Yuba River

The South Yuba River Bundle contains one FERC-licensed project, the Drum-Spaulding Project. This project is located in the upper portions of the South Yuba River and Bear River Watersheds, which are contained in the Nevada City Ranger District of the Tahoe National Forest. The resources associated with this project are about one to two hours east of Sacramento and are accessible from Interstate 80. The Drum-Spaulding project supports numerous recreational facilities, primarily in association with project reservoirs.

Drum-Spaulding Project (FERC 2310)

The Drum-Spaulding Project is in portions of both Placer and Nevada counties and extends along Interstate 80 (I-80) from Auburn to Donner Summit on the west slope of the Sierra Nevada. The Drum-Spaulding Project boundary also includes the seasonally operated Bear Valley Service Center. The Bear Valley Service Center, a seasonal headquarters, is located within the Drum-Spaulding FERC Project boundary. The land uses at the service center include office activities, concrete production, gravel storage, and vehicle fueling. Most of the project area lies within three ranger districts in the Tahoe National Forest; however, a majority of the project's forebays, afterbays, and powerhouses, as well as two recreation facilities, lie outside the USFS lands, north of the I-80 corridor and near Auburn. In addition, Rock Creek Yard Service Center is located in Placer County within the Auburn city limits, near State Highway 49, on Canal Street. The service center is adjacent to the Wise Canal in the Drum-Spaulding FERC Project. The service center activities comprise most of the land use at the 11.97-acre parcel. Activities include administrative work, equipment and hazardous materials storage, and a vehicle fueling station.

Pacific Gas and Electric Company's land use in the project area consists primarily of activities and structures associated with hydroelectric generation. Other uses within the project area include timber preserves, both on private and public lands, recreational activities, such as water sports, skiing, and camping, and grazing. In addition to these land uses, the project is operated in close coordination with the Nevada Irrigation District (NID) and Placer County Water Agency (PCWA) systems. Both NID and PCWA receive water for domestic and irrigation use from numerous delivery points located along the project's extensive canal and water conduit system.

There are several properties with varying land uses located near the Wise Canal in Auburn. The former Cal-Ida lumber mill was located on both sides of the canal. The property was split into two properties in 1971; the western portion became a crate and box factory, the southern portion became a planer mill, and the lands north and east of the canal were used for drying lumber that was manufactured at another mill in Grass Valley. In addition to Cal-Ida, several other properties

are located immediately adjacent to the canal, including Pacific Gas and Electric Company's Rock Creek Yard Service Center and Payne Properties.

Recreation facilities associated with the project, which are listed in Section 4.6, Recreation. Livestock grazing occurs within the FERC project boundaries and also in the vicinity of the project near Auburn.

Several inactive mines are located around Fordyce and Meadow Lakes, and Mammoth Spring Mine is in the vicinity. Historic mining is evident at several abandoned mine tunnels and at the Nichols Diggings, which are remnants of placer mining from the 1800s. Pacific Gas and Electric Company has granted a lease to an individual for the purpose of aggregate removal in Placer and Nevada Counties; however, the aggregate has not yet been removed. A growing land use in both urban and rural areas of the counties is residential development, as more Sacramento-area workers move to the mountain regions.

Bundle 12: Chili Bar

The Chili Bar Bundle contains one FERC-licensed project, the Chili Bar Project, within El Dorado County. Landownership in this bundle is mostly private with considerable public lands owned by the Bureau of Land Management and a small amount of State Park land. Land uses in the project area include rural residential development, ranching and grazing, river recreation, and recreational uses oriented to gold mining history.

Chili Bar (FERC 2155)

The Chili Bar Project is in a relatively remote portion of El Dorado County and is surrounded by land owned by the El Dorado National Forest. The White Rock Powerhouse, owned and operated by the Sacramento Municipal Utilities District (SMUD), is located along Chili Bar Reservoir upstream of the Chili Bar Project.

Pacific Gas and Electricity Company's land use in the project area consists primarily of activities and structures associated with hydroelectric generation. The area surrounding the project is sparsely populated, with some industrial and commercial development. Nugget Campground, a private campground, is approximately 2,000 feet southwest of the project on the South Fork American River. Slate Mine is about 3,000 feet down river from the Chili Bar Powerhouse.

4.1.4.4 Motherlode Regional Bundle

This section provides an overview of uses associated with the land interests to be conveyed to the new owners of Pacific Gas and Electric Company's hydroelectric facilities in the Motherlode Regional Bundle. It also describes the planned land uses and the regulatory framework governing those land uses. The section then describes the existing land uses at specific projects and discusses general plans or regulations that affect lands within the vicinity of the projects.

Regional Setting

Table 4.1-15 provides an estimate of the acreage included in the land interests that will be conveyed to the new owner(s) of the facilities in the Motherlode Regional Bundle.

Table 4.1-15 Acreage Summary for the Motherlode Regional Bundle

Project, Service Center, or Land Parcel	FERC License #	FERC Acreage	Watershed Acreage	Total Acreage
Mokelumne River Project	137	2,201	4,990	7,191
Spring Gap-Stanislaus Project	2130	201	568	769
Phoenix Project	1061	232	839	1,071
Merced River Project	2467	19	1	20
Tiger Creek Hydro Service Center	137	0		N/A
Total		2,653	6,398	9,051

The Motherlode Regional Bundle is located within the counties of Amador, Alpine, Calaveras, Tuolumne, Mariposa, and Merced. Project lands within this regional bundle are located in sparsely populated areas. The most populated county within this regional bundle is Merced (201,000), which only contains 8 acres of Project Lands. The remaining counties within this Bundle have low population levels that range between approximately 2,000 people (Alpine County) to a maximum of about 53,000 people (Tuolumne County).

The Motherlode Regional Bundle consists of a total of 9,051 acres, 7,817 acres of which are actual land including the four FERC-licensed projects. The remaining bundle acreage of 1,234 acres lie under Pacific Gas and Electric Company reservoirs. Table 4.1-15 provides acreage associated with the Motherlode Regional Bundle.

Project Lands are located in remote areas and are either difficult, or impossible, to access due to steep topography, winter climates, and/or the heavily forested nature of the lands. About 2,653 acres of Project Lands are located within FERC Licensed Areas. The remainder of Project Lands are Watershed Lands, do not contain hydroelectric generating facilities, and are outside FERC project boundaries.

Predominant current land uses occurring on the Project Lands of this regional bundle include forestry and timber harvesting, recreation, utility lines, and telecommunications facilities.

Local Regulations and Policies

Eldorado National Forest

Please refer to the Drum Regional Bundle for a discussion of the El Dorado Forest Plan.

Stanislaus National Forest

The Stanislaus National Forest seeks to preserve unique ecosystems, species of wildlife, fish, plants, scenic values, and recreational opportunities. The Forest contains campgrounds with more than 100 sites in a variety of settings, miles of rivers and streams for fishing, canoeing, rafting, or swimming. There are vast amounts of land for hiking, backpacking, horseback riding, mountain biking, and snowmobiling. The role of the USFS is to ensure that projects are consistent with the purposes for which the National Forests are created.

Amador County General Plan and Zoning

Objectives of the General Plan are to protect the customs, cultures, economy, resources, and environment of the county. The primary objectives of the plan are to provide a useful and effective guide for area growth and development, which will utilize area resources and potentials to produce the best possible future for the area and its people. Applicable General Plan policies include:

- Preserve, protect and where appropriate, promote the development of natural resources in water, minerals, timber, and soil resources;
- Protect, and carefully develop where appropriate, the varied resources for public recreation in scenic and historical areas, hunting and fishing areas, lakes and waterways, forests and wilderness, and urban open spaces;
- Strengthen the area economy through expanded commercial and industrial activity, protection and expansion of agriculture and forestry and increased local processing of their raw material;
- Provide for adequate housing for all elements of the population, present and future; and
- Provide and maintain rural and urban services and facilities of high quality for adequate health, safety, educational, cultural, and recreational facilities for the public benefit and enjoyment.

The Amador County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-16 Amador County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
General Forest	Timber Preserve Zone (TPZ)	Provides for the protection of timberlands and for the prevention of encroachment by incompatible uses of land
Unclassified	Residential (R1-A)	To be applied to areas presently zoned as unclassified districts and suited to residential and agricultural uses subject to such regulating

Alpine County General Plan and Zoning

The goals of Alpine County seek to provide a level of public service adequate to insure the health, safety, and welfare of Alpine County citizens and promote economic development. To respond to local needs through a balanced plan that meets social and environmental concerns, environmental

constraints, economic growth, orderly development in specified areas, and public service costs. Applicable policies include:

- Maintain a comprehensive planning process in Alpine County;
- Protect the mineral resources, conserve soil and related resources, and promote their wise use;
- Preserve and protect agricultural practices and wetland areas;
- Protect and increase the populations of threatened, rare, or endangered plant species, preserve and protect agricultural practices;
- Encourage clustering of development proposed for agricultural lands to minimize loss of productive lands to agriculturally uneconomical parcel sizes; and
- Promote wise forest management practices and fire protection on all existing or potential commercial timberlands.

The Alpine County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-17 Alpine County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Open Space	Open Space (OS)	Protection of natural resources such as mineral resources, timber harvesting, and agriculture
Wilderness Area	Wilderness (W)	Only applies to Mokelumne Wilderness

Calaveras County General Plan and Zoning

Objectives of Calaveras General Plan land use section are to attain goals and carrying out policies that are consistent with developing land use policies that address local issues and respect local preferences and improve the economy of Calaveras County by encouraging job-generating commercial and industrial development, encourage projects that aid the travel and tourism industry and work cooperatively with the Chamber of Commerce, The Economic Development Company, and similar organizations. The General Plan seeks to:

- Achieve consistency between land use designations and zoning;
- Provide for flexibility in site design for single-family residential homes;
- Preserve and manage those lands identified as Natural Resource Lands for the future good of the general public;
- Maintain Community Plans for areas of the County in which major growth is occurring;
- Maintain Special Plans for areas of the County possessing unique resources or development issues;
- Provide long term, comprehensive development planning for large projects involving multiple land uses;
- Provide for the integration of residential and nonresidential uses within large developments;
- Discourage strip commercial development from occurring within Community Centers;
- Designate Residential Center areas to provide for orderly residential development;
- Ensure that future single-family residential land divisions or increased density occur on lands capable of supporting such land use;
- Protect the reasonable use of property in the County;
- Appropriately provide for Rural Home Industries as accessory uses to residences;
- Provide for the development of recreation oriented commercial uses, which are necessarily tied to the location of recreation resources; and
- Preserve and encourage the expansion of high capability timberlands for timber protections and harvest.

The Calaveras County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-18 Calaveras County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Timber Lands	Timber Preserve (TP)	Protection of timberlands; mineral resource extraction and production
Unclassified	Unclassified (U) : usually (SFR) or (AG)	Applied to lands until more precise zoning is adopted

Tuolumne County General Plan and Zoning

The objective of this General Plan is to protect and enhance the quality of life for all residents while facilitating growth and development to meet the present and future needs of the county’s residents, visitors, and businesses. Applicable general plan policies include:

- Minimize conflicts between incompatible land uses;
- Promote a job-housing balance in the County and encourage new defined communities to be designed to provide a job-housing balance;
- Encourage development that promotes the use of alternative transportation systems;
- Designate adequate land in appropriate areas to accommodate a range of residential densities and amenities to accommodate the housing needs of all income groups residing in Tuolumne County;
- Promote the development of commercial uses to meet the present and future needs of Tuolumne County’s residents and visitors and maintain economic vitality;
- Promote the development of industrial uses to meet the present and future needs of Tuolumne County’s residents and to provide jobs and promote economic vitality;
- Limit intrusion of new development into agricultural areas by avoiding the conversion of agricultural lands to residential, non-agricultural commercial, or industrial uses except those uses that are determined to be agricultural support;
- Stabilize agricultural use at the urban fringe; minimize conflicts between agricultural and non-agricultural uses; and
- Manage agriculturally related industrial and commercial uses in agricultural areas to facilitate local agricultural production.

The Tuolumne County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific gas and Electric Company land:

Table 4.1-19 Tuolumne County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Parks and Recreation	General Recreational District (K)	Indoor and outdoor sports, recreation facilities and commercial places of amusement
Parks and Recreation	Commercial Recreation District (C-K)	Integrated resort and vacation-oriented commercial complexes
Parks and Recreation	Timber Preserve Zone (TPZ)	Protection of timberland in order to prevent encroachment of incompatible uses
Open Space	Open Space (O)	To protect the public in areas not suitable for development because of flooding or other natural hazards and to provide

General Plan Designation	Zoning Classification	Allowed Uses
		areas of open space for the protection of wildlife habitat and scenic quality where vegetation removal may be appropriate in certain instances
Public Facilities	Public District (P)	To acknowledge the limited ability of the County to impose regulations on land under jurisdiction of public agencies, including, but not limited to, Federal, State, and local government bodies and public utilities
General Agricultural District	Agriculture; Ten acre Minimum (A-10)	To provide for country-estate type living on parcels less than 20 acres in area while maintaining areas for the commercial production for food and fiber where such agricultural uses can exist without the encroachment of incompatible land uses

Merced County General Plan and Zoning

The purpose of the Merced County Land Use element is to identify appropriate land uses and recognize a balance between human needs and natural and environmental limitations. The General Plan designates the highest and best use of land from a community and countywide perspective with the intent to create a land use pattern that achieves a balance among all needs of the county. The goals of Merced County General Plan seek to establish:

- Land use pattern, which enhances the integrity of both urban and rural areas;
- High quality living environment within unincorporated communities;
- Efficient, environmentally sound development within identified Rural Residential Centers.
- Conservation of productive agricultural and other valuable open space lands; and
- Rural environment, which achieves a balance between its agricultural and other open space resource values.

The Merced County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-20 Merced County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Foothill Pasture	(A-2)	Exclusive Agriculture, 160-acre minimum

Mariposa County General Plan and Zoning

The goals of the Mariposa County land use element are to promote a balanced and functional mix of land uses consistent with community values, providing guidance to public and private investment. The land use element reflects opportunities and constraints affecting land use as identified in other elements of the plan. Applicable policies include:

- Establish minimum site standards to preserve, protect, and promote development of the County's natural resources;
- Set policies and standards that can be utilized by the County to provide a reasonable degree of protection for wildlife and scenic resources;

4.1 Land Use

- Establish site standards and adopt procedures that provide for commercial and industrial development based upon suitability of access, terrain conditions, utility availability, and compatibility with adjoining uses; and
- Establish site standards and adopt procedures that provide for clean, safe, sanitary and economical building sites for the present and future residents.

The Mariposa County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-21 Mariposa County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Land Conservation Area	Agricultural Exclusive Zone (AEZ)	Agricultural use with the purpose of preserving the agricultural industry as a viable economic activity

Bundle 13: Mokelumne River

The Mokelumne River Bundle contains one FERC-licensed project, the Mokelumne River Project. Project elements, facilities and features are located within Alpine, Amador, and Calaveras Counties, and largely within the boundaries of Eldorado and Stanislaus National Forests. Land uses include timber harvest, rural residential, rural community, resort, and developed and dispersed recreation. Recreational activities in the project vicinity include general reservoir, general forest, water contact in lakes and streams, whitewater, stream and lake angling, resort, OHV, hiking and biking, day-use and camping

Mokelumne River (FERC 0137)

The Mokelumne River Project, which includes the Tiger Creek Hydro Service Center, is in Amador, Alpine, and Calaveras Counties near the towns of West Point and Jackson. About 85 percent of the project area is in the Eldorado National Forest and the other 15 percent is owned by Pacific Gas and Electric Company and the Georgia-Pacific Corporation. The public lands are managed to maintain a naturally appearing landscape and to protect the natural resources found within the area. Pacific Gas and Electric Company's land use on the parcels subject to ownership transfer consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area include primarily timber production on private lands in accordance with regulations of the California Forest Practice Act.

The Tiger Creek Hydro Service Center is adjacent to the Tiger Creek Powerhouse in Amador County, approximately 16 miles northeast of Jackson. The Tiger Creek Conference Center, which overlooks the Tiger Creek Afterbay, is located in the vicinity. The service center and conference center are on lands administered by the BLM. The area surrounding the service center is sparsely populated with minor commercial development and scattered residences. There are several buildings located in the project area owned by Pacific Gas and Electric Company including offices,

workshops, storage, and housing facilities for Pacific Gas and Electric Company personnel. There is also an on-site water treatment facility.

Pacific Gas and Electric Company's land use on the parcels subject to ownership transfer consists primarily of activities and structures associated with hydroelectric generation. Other uses in the service center area to be transferred include timber harvesting, mining, and recreation. One quarry is located near the Salt Springs Reservoir, but there are no mines within the vicinity of the service center.

The area surrounding the project is sparsely populated with minor commercial development and scattered residences. There are several buildings located in the project area owned by Pacific Gas and Electric Company. They include offices, workshops, storage, and housing facilities for Pacific Gas and Electric Company personnel. There is also an on-site water treatment facility at the Tiger Creek Powerhouse.

Mines in the vicinity of the project include the Amador-Columbia Mine, Black Prince Mine, Blue Jay Mine, and Leroi Mine. One quarry is located near the Salt Springs Reservoir.

There are several recreational facilities located within the vicinity of the project that are either operated by Pacific Gas and Electric Company or the Eldorado National Forest or are privately owned and operated.

Bundle 14: Stanislaus River

The Stanislaus River Bundle contains 2 FERC-licensed projects: the Spring Gap-Stanislaus (FERC 2130) and the Phoenix Project (FERC 1061). These projects are located exclusively within Tuolumne County and are totally within the boundary of the Stanislaus National Forest, except for the lowest element of each Project. Land uses in the vicinities of the projects include timber harvest, rural residential, and rural community. The Spring Gap-Stanislaus Project also includes resort and recreation uses. Nearly all project elements of the Spring-Gap Stanislaus Project are located within the Stanislaus National Forest with intermingled USGS private lands under the jurisdiction of Tuolumne County. The upper portion of the Phoenix Project is in an area of intermingled private and Stanislaus National Forest lands, while downstream portion land is predominantly under private ownership.

Spring Gap-Stanislaus (FERC 2130)

The Spring Gap-Stanislaus Project is in Tuolumne County near the community of Strawberry. Most of the site is located in the Stanislaus National Forest. Yosemite National Park is located about ten miles south of Relief Reservoir, with the Emigrant Wilderness Area occupying the land in between. The project is one of three hydroelectric projects in the general area where the North, South, and Middle Forks of the Stanislaus River join the main stem.

The area surrounding the project is sparsely populated with some cabins and small communities located along canyons and hillsides. Pacific Gas and Electric Company's land use on the parcels subject to ownership transfer consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area include timber production, recreation, agriculture, and residential land uses.

Phoenix Project (FERC 1061)

The Phoenix Project is in Tuolumne County, ten miles east of Sonora. Portions of the project area are within the Stanislaus National Forest. The area surrounding the Phoenix Powerhouse is sparsely populated with no commercial or industrial development.

Pacific Gas and Electric Company's land use on the parcels subject to ownership transfer consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area to be transferred include timber production, agriculture, and residential land uses. There are several small cattle ranches near the project, but the area around Lyons Reservoir is heavily forested and grazing occurs only at the upper end of the reservoir. The project area has also been historically used for recreation by county residents and the general public.

Bundle 15: Merced River

The Merced River contains one FERC-licensed project, Merced Falls. It is located on the Mariposa-Merced County line about 30 miles east of Highway 99 corridor near Modesto. The vicinity of the project is dominated by open grassland with sparse ranching and grazing activities as the major land uses. Nearly all the lands in the project vicinity are private. Mariposa has jurisdiction of lands to the east of the County Line and Merced County has jurisdiction to the west of the County Line, on which the project lies. Recreational activities in the project vicinity include general reservoir, water-contact in lakes and streams, lake and stream angling, hiking and biking, day-use, and camping.

Merced River Project (FERC 2467)

The Merced Falls Project is in Mariposa and Merced Counties, 25 miles northeast of the town of Merced, and 11 miles south of La Grange. The McSwain Reservoir and Powerhouse and the Exchequer Reservoir (Lake McClure) and Powerhouse, both operated by the Merced Irrigation District (MID), are located approximately 1.0 and 5.3 miles upstream of the Merced Falls Powerhouse, respectively.

Pacific Gas and Electric Company's land use on the parcels subject to ownership transfer consists primarily of activities and structures associated with hydroelectric generation. Other uses in the project area include recreation and rural residences. Lake McClure has recreational development for fishing, swimming, picnic and campsites, boat launching, and private concession facilities. In

addition to these uses, there is evidence of mining by the dredge tailings along the Merced River, directly west of the project area.

4.1.4.5 Kings Crane-Helms Regional Bundle

This section provides an overview of uses associated with the land interests to be conveyed to the new owners of Pacific Gas and Electric Company's hydroelectric facilities in the Kings Crane-Helms Regional Bundle. It also describes the planned land uses and the regulatory framework governing those land uses. The section then describes the existing land uses at specific projects and discusses general plans or regulations that affect lands within the vicinity of the projects.

Regional Setting

The Kings Crane-Helms Regional Bundle includes seven hydroelectric projects located on the San Joaquin River, Willow Creek (a tributary to the San Joaquin River), the Kings River, the Tule River and the Kern River. The area in this region is generally mountainous, remote from major population centers, and sparsely populated, with the exception of a small concentration of residential and resort development related to recreational uses at Bass Lake in Madera County. Most of the hydroelectric facilities are located within the boundaries of two National Forests, the Sequoia National Forest and the Sierra National Forest. In addition, they straddle four counties: Madera, Fresno, Tulare, and Kern. The total population in the Region was 1,871,500 in 1997, which is projected to grow to 2,775,300 by 2010.

In addition to divesting its hydroelectric facilities, Pacific Gas and Electric Company proposes to divest 4,255 acres of land. This land includes land submerged by water, land within the FERC boundaries and critical to hydroelectric operations, and land outside the FERC boundaries. The latter may be contiguous to FERC boundaries or non-contiguous, depending on the facility. The acreage associated with FERC-licensed land and Watershed Land is shown in the Table 4.1-22.

Table 4.1-22 Acreage Summary for the Kings Crane-Helms Regional Bundle

Project, Service Center, or Land Parcel	FERC License #	FERC Acreage	Watershed Acreage	Total Acreage
Crane Valley	1354	1,119	740	1,859
Kerckhoff	96	167	73	240
Balch	175	0	0	0
Haas-Kings	1988	549	458	1,007
Helms	2735	301	139	440
Tule River	1333	10	35	45
Kern Canyon	178	52	612	664
Total		2,198	2,057	4,255

The lands within the FERC boundary are primarily used for hydroelectric power generation. Facilities associated with hydroelectric power generation include: reservoirs; dams; powerhouses; water conveyance and storage facilities; transmission and distribution facilities; operations facilities; communications facilities; and storage and other support facilities. All of the lakes in the region are manmade.

Pacific Gas and Electric Company's lands that lie outside the FERC boundary are typically undeveloped open space. However, in some cases these lands are used for recreation facilities, habitat management areas, scenic resources preservation, Pacific Gas and Electric Company employee housing, recreational cabins, and hydroelectric facility support centers. Pacific Gas and Electric Company's lands, and associated uses, are described in more detail later in this section.

Local Regulations and Policies

Public lands in the Kerckhoff Project area are managed by the Sierra National Forest, in accordance with the direction contained in its Forest Plan, and by the BLM in accordance with its Hollister Resource Management Plan and Record of Decision of 1984. Development on private lands falls under the jurisdiction of Madera, Fresno, Tulare, and Kern Counties. Pertinent policies promulgated by these agencies are described in the following.

U.S. Forest Service

The USFS manages the largest part of the lands in the region. The Sierra National Forest's Land and Resource Management Plan (1991) and the Sequoia National Forest Land and Resource Management Plan (1988), and the Management Plan Settlement Agreement (1990) are the governing planning documents for USFS lands in the Kings Crane-Helms Regional Bundle. Pertinent goals included in these documents are described in the following.

Sierra National Forest Land and Resource Management Plan. The Sierra National Forest Land and Resource Management Plan (Forest Plan) provides for long-term management of lands within the Forest. The Forest Plan provides for various uses and conservation of forest land and includes recreation, preservation of visual resources, wilderness areas, fisheries, wildlife, sensitive plants, riparian areas, range management, timber harvesting, forest diversity, soils, water, minerals, and cultural resources, and hydroelectric power generation. The Forest Plan goals include:

- Producing water of sufficiently high quality to meet or exceed water requirements;
- Providing enough sufficient habitat so sensitive species do not become threatened or endangered;
- Managing fish and wildlife habitat to maintain viable populations of all resident or indigenous fish, wildlife, and plant species;
- Managing plant communities so as to maximize diversity for plants and animals; and
- Providing a broad spectrum of dispersed and developed recreation opportunities.

Sequoia National Forest Land and Resource Management Plan. The Sequoia National Forest Land and Resource Management Plan (Forest Plan), adopted in 1988, provides for a high level of

wilderness allocation, wide streamside management zones to protect riparian areas from disturbance, an extensive trail system, and fire prevention activities. Intensification of active recreation activities at developed recreation sites is de-emphasized. The Forest Plan is currently being revised. However, until it is formally adopted, the 1988 Forest Plan is in force. However, it must be considered along with the Sequoia National Forest Mediated Settlement Agreement of 1990. The Forest Plan goals include:

- Complying with water quality goals as specified in the Clean Water Act;
- Protecting and improving management of riparian areas;
- Maintaining and improving habitat for endangered and threatened plant and animal species;
- Providing well distributed habitat diversity for all indigenous wildlife species;
- Maintaining or increasing habitat to support viable populations of wildlife and fish species; and
- Increasing the quality and variety of recreation experiences available.

Bureau of Land Management

The BLM manages public lands underlying and surrounding project tunnel alignments in the Kerckhoff Bundle. This land is within an area called the Squaw Leap Management Area in BLM's Hollister Resource Management Area of 1984. The main rationale for the goals and management decisions in this area rests on the large number of recreation, wildlife, and grazing-related facilities the area as well as Pacific Gas and Electric Company's hydroelectric facilities including underground lines. The Plan is conceived to protect the facilities from potential surface disturbance related to mining or fire suppression activities. Pertinent management goals applying to this area are as follows:

- Livestock grazing will be managed intensively under existing management agreements. Emphasis will be placed on protection of wildlife and recreation values;
- Mining activity will be constrained to protect significant resource values and capital investments in the area;
- Fire will be managed to protect significant resource values and capital investments in the area;
- Provide/maintain recreational opportunities in the area while protecting other resources, and minimizing conflicts with other users and adjacent landowners;
- Protect/maintain wildlife habitat conditions in the area;
- Protect significant cultural and visual resources associates with the area;
- Recreation is considered a primary and important use of the Squaw Leap area; and
- Significant cultural resources in the area need to be protected from indiscriminate collection and surface-disturbing activities.

Madera County General Plan and Zoning

The Madera County General Plan and the County Zoning Ordinance are the legally adopted documents regulating land use in the County. The Land Use Element policies of the Madera County General Plan relevant to the proposed project are as follows:

- Concentration of urban uses in existing community areas to protect rural uses, while protecting agricultural lands;

4.1 Land Use

- Multiple use designations for the foothill and mountain areas of the community, to accommodate agriculture uses, recreational uses, and homes; and
- Proposed areas for new residential development, which focus on existing communities, although several areas outside the community plan areas are designated in the mountain region of Madera County.

The Madera County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-23 Madera County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Open Space	Multiple Residential	1. One single-family dwelling in permanent structure or one manufactured home on permanent foundation, 2. Guesthouse, 3. Other single-family dwelling in permanent structure or manufactured home for occupancy by a co-owner, indigenous agricultural worker, or a relative of the immediate family, bound by the ties of consanguinity. 4. All existing dwellings in this district shall be regularly permitted uses and not considered as nonconforming uses. 5. Agricultural uses
Rural Residential	Rural Residential	1. One single-family dwelling in a permanent structure or one manufactured home on permanent foundation, 2. Horticulture
Agricultural Residential	Rural Mountain	1. One single-family dwelling in permanent structure or one manufactured home on permanent foundation, 2. Guesthouse, 3. Other single-family dwelling in permanent structure or manufactured home for occupancy by a co-owner, indigenous agricultural worker, or a relative of the immediate family bound by the ties of consanguinity, 4. All existing dwelling sin this district shall be regularly permitted uses and not considered as nonconforming uses
GP: Agricultural Exclusive	Agricultural Rural Exclusive	1. All kinds of agricultural uses, 2. One-single family dwelling in permanent structure or one single family manufactured home on permanent foundation

Fresno County Sierra-North Regional Plan and Zoning

The Fresno County Sierra-North Regional Plan and the County Zoning Ordinance are the legally adopted documents governing land use for relevant lands in the proposed project in Fresno County.

Fresno County’s Sierra-North Regional Plan applies to a portion north of the Kings River, comprising 2,270 miles, essentially the northeastern portion of Fresno County. In addition to providing for energy generation facilities, planned uses encompassed in the Plan include residential uses, recreation, tourism, agriculture, timber harvesting, Watershed Lands, and wildlife.

The Plan policies cover the following specific areas: water resources, forest resources, mineral resources, natural resources (comprised of wetland and riparian areas, fish and wildlife habitat, vegetation, air quality), parks and recreation, recreation trails, historical, cultural, and geological resources, scenic resources, and scenic roadways, as follows:

- Designated Open Space areas shall be subject to the Open Space policies in Section 204-05 of the General Plan;

- USFS properties should be conserved for wildlife habitat, watershed management, timber harvesting, recreational pursuits and similar activities for a non-intensive nature, consistent with their open space management plans;
- Public utility lands should be conserved for wildlife habitat, watershed management, timber harvesting, recreational pursuits and similar activities of a non-intensive nature consistent with their open space management programs; and
- Intensive recreational activities and recreational related commercial uses shall not be permitted in areas of significant vegetation or wildlife habitat. Commercial uses in Open Space areas shall only be permitted if they are directly associated with a recreational use.

Within the generalized National Forest boundary, private property not designated for more intensive uses is most appropriate for Open Space uses. An ultimate aim is to cooperate with the USFS in consolidating where feasible its ownership of private holdings. The following zones are appropriate to implement the Public Lands and Open Space designation:

- A Timberland Preserve District with a 40-acre minimum parcel size for lands used for timber preservation and production;
- An Exclusive Agricultural District, with a minimum parcel size of 40 acres, for lands used for grazing and other agricultural operations;
- A Resource Conservation District with a 40-acre minimum parcel size for hazardous lands; and
- A Recreation District to provide for varying intensities of outdoor recreational development and necessary supportive commercial uses.

The Fresno County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-24 Fresno County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Foothill Rural Residential	Rural Residential	<ol style="list-style-type: none"> 1. Single-family home 2. Farmworker housing 3. Agriculture 4. Farm animals-1 unit per lot
Open Space	Resource Conservation	<ol style="list-style-type: none"> 1. Apiaries 2. Forest fire lookout stations 3. Grazing 4. Growing and harvesting of timber and forest products 5. Home occupations, Class I, subject to the provisions of Section 855-N 6. Management for watershed, fish and wildlife habitat 7. Mobile home occupancy, not more than one mobile home per lot except as provided 8. One-family dwelling units, not more than one dwelling per lot. 9. Uses and facilities appurtenant to timber growing and harvesting including but not limited to roads, log landings, and log storage areas, but not including processing facilities 10. Wildlife preserves

Tulare County General Plan and Zoning

The Great Western Divide, Northern Amendment to the Tulare County General Plan and the County Zoning Ordinance are the legally adopted regulatory documents in Tulare County relevant to the proposed project. Relevant land use policies in the Great Western Divide Northern Plan are as follows:

- Establish land use densities consistent with available or assured public facilities;
- Development in environmentally sensitive areas should be precisely planned;
- The amount and type of commercial development should satisfy local residential and recreational visitor needs;
- Land use patterns shall promote compatibility of uses;
- Historical land use patterns shall be maintained;
- Mixed use developments shall be allowed as Planned Unit Developments through Special Use Permit;
- Land use designations adjacent to the Sequoia National Forest shall be compatible with the planned land uses designated by the National Forest within its jurisdiction; and
- New quasi-public facilities shall be permitted in any area of the Plan subject to approval by a Special Use Permit.

The Tulare County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-25 Tulare County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Resource Conservation, Mountain Residential), and Quasi Public	Mountain Residential	Single Family Dwelling

Kern County General Plan and Zoning

The Kern County General Plan and the Kern County Zoning Ordinance are the governing land use documents in the County. Kern County General Plan policies relevant to the proposed project are as follows:

- For new development at the specified urban density, domestic water service shall be by an established water district or an existing mutual water company;
- Should any urban area not be presently serviced by any sewage collection system, a timetable will be established for siting and construction of necessary collection, treatment, and disposal facilities;
- All methods of sewage disposal and water supply within County jurisdiction planning area shall meet the requirements of the Kern County Environmental Health Services Department and Regional Water Quality Control Board; and
- A compact urban development pattern to established communities will be maintained in order to avoid uneconomic investment by the public sector for excessive or premature extension of public facilities and services.

The Kern County General Plan and Zoning Code identify the following land use designations and zoning classifications for Pacific Gas and Electric Company land:

Table 4.1-26 Kern County General Plan Designations and Zoning Classifications

General Plan Designation	Zoning Classification	Allowed Uses
Open Space	Recreation Forestry	<p>A. Residential Uses: manufactured home, residential accessory structures, residential facility, serving 6 or fewer persons, single family dwelling, with a width greater than 16 feet.</p> <p>B. Agricultural Uses: growing and harvesting crops: Christmas trees, growing of agricultural crops for domestic use of the resident/occupant, timber; breeding and raising animals: beekeeping, poultry and rabbits, horses, donkeys, mules, llamas, hogs, sheep, goats, dairy stock, and beef cattle, ostrich and emus, birds, including show or racing pigeons and other small fowl, fish and frogs.</p> <p>C. Recreation Entertainment, and Tourist Activities: boat dock, private, fishing or fly casting pond, park or playground.</p> <p>D. Utility and Communications Facilities: transmission lines and supporting towers, poles, and underground facilities for gas, water, electricity, telephone, or telegraph service owned and operated by a public utilities commission, microwave towers.</p> <p>E. Resource Extraction and Energy Development Uses: mineral exploration, oil or gas exploration and production, solar energy electrical generator, wind-driven electrical generator.</p> <p>F. Institutional Uses: charitable or public service organization, museum, when associated with a wildlife or nature preserve.</p> <p>G. Miscellaneous Uses: drainage sump, flood control facilities, garage or yard sales, home occupation, hunting or fishing clubs, water storage or groundwater recharge facilities, water system, wildlife or nature preserve</p>

Bundle 16: Crane Valley

The Crane Valley Bundle includes one FERC-licensed project, the Crane Valley Project. The project is located along the western edge of the Sierra National Forest approximately 40 miles northeast of Fresno and is part of the upper San Joaquin River system. The project is within Madera County near the community of Oakhurst. In addition to Oakhurst, which is the largest community in the vicinity of project facilities, small unincorporated rural communities such as Yosemite Forks, Bass Lake, The Forks, Wishon, North Fork, and South Fork are located near the project. Recreational activities in the project area associated with the Sierra National Forest include camping, boating, fishing, swimming, hiking, hunting, horseback riding, and skiing.

Crane Valley Project (FERC 1354)

The Crane Valley Bundle includes one FERC-licensed project, the Crane Valley Project. The Crane Valley Project is located on the South and North Forks of Willow Creek. The South Fork is a tributary to the North Fork of Willow Creek, which is a tributary to the San Joaquin River. The project consists of five powerhouses that are fed mainly by water stored in Bass Lake, located about 42 miles east of Fresno.

Project facilities consist of the Crane Valley Powerhouse, the San Joaquin #3, San Joaquin #2, San Joaquin No. 1A, and the A.G. Wishon Powerhouses, water conveyance facilities, a switchyard and associated buildings, Bass Lake (or Crane Valley Reservoir), the Crane Valley Dam, Chilkoot Lake and Dam, Browns Creek diversion dams, and various recreation facilities at Bass Lake. Chilkoot Lake is approximately eight miles northeast of Bass Lake and is primarily fed by Chilkoot Lake

Pick-Up Ditch, a rock channel that diverts runoff from Chiquito Creek. In addition to Chilkoot Lake and Bass Lake, key reservoirs in this project system include Manzanita Lake and Corrine Lake.

Bass Lake is situated within Madera County near the community of Oakhurst. In addition to Oakhurst, which is the largest community in the vicinity, the small unincorporated rural communities of Yosemite Forks, Bass Lake, the Forks, Wishon, North Fork, and South Fork are located near the project.

Bass Lake, with 45,410 acre-feet of useable storage, is the largest storage reservoir in the Crane Valley system. The lake is situated at an elevation of 3,400 feet and has 14 miles of shoreline and 1,165 surface acres of water. Spring runoff is stored in the lake for later release to power production. The lake is considered a "warm water" lake with water temperatures reaching up to 80 degrees in summer months. Road 222 is the primary access route to the lake and Roads 426, 222 North, and 274 provide secondary access.

In addition to divesting the hydroelectric facilities associated with the Crane Valley Project, Pacific Gas and Electric Company proposes to divest 1,859 acres of land. Of this land, 1,119 acres lies within the FERC boundary and 740 lies outside the FERC boundary. For the most part, Pacific Gas and Electric Company's land within the FERC boundary is occupied by hydroelectric facilities or is submerged by water. Pacific Gas and Electric Company's land within the FERC boundary that is not occupied by project facilities is generally undeveloped and can be characterized as open space. Pacific Gas and Electric Company's land outside the FERC boundary is generally undeveloped but one parcel located on the southwest shore of Bass Lake is occupied by Pacific Gas and Electric Company housing and an organization camp. Most of the land surrounding the Crane Valley Project is public land managed by the Sierra National Forest. However, some private lands are also present, particularly on the north and east shores of Bass Lake, near Manzanita Lake and near Powerhouses 2 and 3.

Of the 1,859 acres of land Pacific Gas and Electric Company proposes to divest with the Crane Valley Bundle, about 1,105 acres are considered forest land. Vegetation consists of blue oak-gray pine at the lower elevations, Ponderosa pine-live oak-black oak at the mid-elevations and red fir-lodgepole pine at the higher elevations. Currently, there are no THPs in the Kings Crane-Helms Region. However, 100 acres in the Crane Valley Project are considered suitable for timber management. Little timber harvesting has occurred on these lands with the exception of salvage harvests. Salvage harvest has taken place to recover insect-killed pine, mainly to reduce hazards.

Bundle 17: Kerckhoff

The Kerckhoff Bundle includes one FERC-licensed project, the Kerckhoff Project. This project is located downstream of the Crane Valley project and is approximately 30 to 40 miles northeast of the Clovis-Fresno metropolitan area. Project facilities are located along the western edge of the

Sierra National Forest in Madera and Fresno counties. The small communities of Auberry and New Auberry are located approximately seven miles south of Kerckhoff reservoir, and the communities of North Fork and South Fork are located approximately eight miles north of the reservoir.

Kerckhoff Project (FERC 0096)

The Kerckhoff Bundle includes one FERC-licensed project, the Kerckhoff Project. This project is located downstream of the Crane Valley Project, on the San Joaquin River, about four miles west of Auberry. The Project includes a reservoir referred to as Kerckhoff Reservoir, two powerhouses referred to as Kerckhoff No. 1 and Kerckhoff No. 2, and appurtenant facilities. Kerckhoff Reservoir serves as the forebay for both Kerckhoff No. 1 and No. 2 powerhouses and has a usable storage capacity of approximately 4,252 acres-feet (af). The intake structures for both powerhouses are situated on the south side of the reservoir; two tunnels convey water from the intake structures to the Kerckhoff No. 1 and No. 2 Powerhouses. Kerckhoff No. 1 Powerhouse has a total flow capacity of 1,735 cubic feet per second (cfs); Kerckhoff No. 2 Powerhouse has a total flow capacity of 5,100 cfs. After generating power, water is released back into the San Joaquin River, near the upper end of Millerton Reservoir, which is managed by the Bureau of Reclamation. The Bureau provides water for irrigation through a special agreement (Miller and Lux Agreement) with downstream farmers.

Pacific Gas and Electric Company proposes to include its Auberry Hydro Service Center with the Kerckhoff Project. The Auberry Hydro Service Center is located in Fresno County in the town of Auberry, approximately 24 miles northeast of Fresno.

In addition to divesting the hydroelectric facilities associated with the Kerckhoff Project, Pacific Gas and Electric Company proposes to divest 240 acres of land. Of this land, 167 acres lie within the FERC boundary and 73 lie outside the FERC boundary. For the most part, Pacific Gas and Electric Company's land within the FERC boundary is occupied by hydroelectric facilities or is submerged by water. In addition, one recreation facility is located within the FERC boundary, on the north shore of Kerckhoff Reservoir. Pacific Gas and Electric Company's land within the FERC boundary that is not occupied by project facilities or by the recreation facility is generally undeveloped and can be characterized as open space. Pacific Gas and Electric Company's land outside the FERC boundary is generally undeveloped but one parcel located on the north shore of Kerckhoff Reservoir is used for grazing. Most of the land surrounding the Kerckhoff Project facilities is public land managed by the Sierra National Forest. However, some private lands are also present, particularly near the south shore of Kerckhoff Reservoir and near the tunnel alignments.

About 207 acres of the 240 acres Pacific Gas and Electric Company proposes to divest with the Kerckhoff Bundle is considered forest land, consisting mainly of foothill woodland grasslands.

Bundle 18: Kings River

The Kings River Bundle consists of three projects: the Helms Pumped Storage project (FERC 2735), the Haas-Kings River Project (FERC 1988), and the Balch Project (FERC 0175). The three projects are located within the Kings River Basin, on the north Fork Kings River (NFKR) and the main stem of the Kings River within the Sierra National Forest. The NFKR joins the main stem Kings River just north of the Pine Flat Reservoir. Combined, the projects include four dams, which impound water in Courtright Reservoir, Wishon Reservoir, Black Rock Reservoir, and the Balch Afterbay. All of these reservoirs are located along the NFKR.

The Helms pumped storage facility is located about 1,000 feet underground, between Wishon and Courtright Reservoirs. The Haas powerhouse is located at about river mile 120 on the NFKR, the Balch Powerhouses are located just above the Balch Afterbay, and the Kings River powerhouse is located at river mile 114 on the main stem of the Kings River. Water from the Kings River Powerhouse is discharged to Pine Flat Reservoir.

The Helms, Balch and Haas-Kings projects are operationally integrated and many of the agreements and operating conditions apply to all of the projects. Furthermore, the lands that would be divested with the hydroelectric facilities are concentrated in two primary locations. Therefore, the land use discussion is combined and presented for the bundle as a whole following the descriptions of individual project locations and facilities.

Helms Pumped Storage (FERC 2735)

The Helms Pumped Storage Project consists primarily of Courtright and Wishon Reservoirs, which are described below.

Courtright Reservoir. Courtright Reservoir, located at an elevation of approximately 8,200 feet, covers a surface area of 1,632 acres when flooded. Access to the lake is provided by paved road, which is not passable during the winter due to snow. Driving time from Fresno is two to three hours.

Courtright Reservoir is a popular recreation destination and offers both developed and undeveloped opportunities. Day use and overnight facilities are available at various locations around the reservoir and accommodate visitors who utilize the area for fishing, picnicking, hiking, backpacking, nature viewing and camping. Several trailheads located near the reservoir provide access to the surrounding National Forest and Wilderness areas.

Wishon Reservoir. Wishon Reservoir is located approximately ten miles south of Courtright Reservoir at an elevation of approximately 6,550 feet. Wishon Reservoir covers a surface area of 1,025 acres when flooded and has nine miles of shoreline. Access to the lake is provided by McKinley Grove Road, which is reached from Fresno by the same route used to reach Courtright Road and Courtright Reservoir. Driving time from Fresno is approximately two to two-and-one

half hours. Similar to Courtright Reservoir, access to Lake Wishon is usually limited during the winter due to snow conditions.

The John Muir Wilderness borders the east margin of the Wishon Reservoir. The Reservoir is a popular recreation destination and offers both developed and undeveloped opportunities. Day use and overnight facilities are available at various locations around the reservoir and accommodate visitors who utilize the area for fishing, picnicking, hiking, backpacking, nature viewing and camping. Several campgrounds on or near the southwestern edge of the reservoir and parking areas on the southeast end of the dam provide staging areas for expeditions into the nearby Wilderness area and angling access. Several trailheads located near the reservoir provide access to the surrounding Forest and Wilderness areas.

Haas-Kings River (FERC 1988)

Water stored in Courtright and Wishon Reservoirs is also used to support the Haas-Kings Project. Basically, water released from Wishon Reservoir is conveyed through the Haas Tunnel to the Haas Powerhouse, where it is used to generate power. Water is released from the Haas powerhouse to the NFKR where it is immediately impounded and diverted into the Balch Project, described below. Water released through the Balch Powerhouse and into the Kings River is immediately diverted at the Balch Afterbay Dam into the Kings River Powerhouse Tunnel. Water is conveyed to the Kings River Powerhouse and then discharged to the main stem of the Kings River, near the upper end of Pine Flat Reservoir.

Pacific Gas and Electric Company operates the Haas-Kings Project in a peaking mode. In addition, the Haas and Kings River powerhouses are operated in conjunction with the Balch powerhouse. The powerhouses are operated at an optimum load. During wet years, the projects are operated continuously to minimize spills.

The Haas-Kings Project is situated within the boundaries of the Sierra National Forest and is currently undergoing relicensing.

Balch (FERC 0175)

The main reservoirs associated with the Balch Project include Black Rock Reservoir and Balch Afterbay, each of which is briefly described in the following. There are no project lands for sale at the Balch project; only hydroelectric facilities and associated licenses are available for divestiture. The lands associated with the Balch facilities is Sierra National Forest land.

Black Rock Reservoir. Black Rock Reservoir, a relatively small reservoir with 36 surface acres and 2.5 miles of shoreline, is located in the NFKR gorge, approximately 70 miles east of Fresno. Access to Haas Powerhouse and Black Rock Reservoir is by Black Rock Road from either the southwest or northeast. From the southwest, the road is paved to Black Rock Reservoir. Driving time to the project area is approximately two-and-one-half to three hours from Fresno.

Swimming and boating are prohibited at Black Rock Reservoir because of Pacific Gas and Electric Company’s hydroelectric operating requirements and public safety concerns. The primary recreation activities at and near the reservoir are fishing, camping, hunting, and hiking.

Pacific Gas and Electric Company operates and maintains Black Rock Campground above the reservoir’s northwestern shoreline. Use of Black Rock Campground, a nearby scenic overlook, and a fishing access trail at the reservoir totaled 840 visitor-days, well below the capacity of these facilities. Use of the campground was about 12 percent of capacity during the 1984 to 1985 recreation seasons.

Balch Afterbay. Balch Afterbay, with only seven surface acres of water, is located in a narrow, steep-sided canyon with poor access. Located approximately 3.4 miles downstream of Black Rock Reservoir, the Afterbay is fenced off to the public at the existing powerhouse tailrace and the diversion dam. Boating, swimming, and fishing are prohibited at Balch Afterbay due to public safety concerns. No developed recreational facilities are located at Balch Afterbay or the nearby Balch Powerhouses.

Dispersed uses occur at the nearby Black Rock Scenic Overlook, which is located near Black Rock Campground on a small promontory above the reservoir. The overlook consists of an informational display and a small bench.

In addition to divesting the hydroelectric facilities associated with the three projects in the Kings River Bundle, Pacific Gas and Electric Company proposes to divest a total of 1,447 acres of land. All of this land is associated with the Haas-Kings and Helms Projects. None is associated with the Balch Project. The breakdown of the project lands Pacific Gas and Electric Company proposes to divest is shown in Table 4.1-27.

Table 4.1-27 Pacific Gas and Electric Company Proposed Project Land Breakdown

Project	Acres within FERC Boundary	Acres outside FERC Boundary	Total Acres
Helms Pumped Storage Project	301	139	440
Haas-Kings Project	549	458	1007
Balch Project	0	0	0

The land Pacific Gas and Electric Company proposes to divest is concentrated in two general areas: Wishon Reservoir and Keller Ranch. In general, the land within the FERC boundaries is either submerged by water or occupied by hydroelectric facilities. In addition, one relatively large parcel near Wishon Reservoir is used as a Wildlife Habitat Management Area. The land outside the FERC boundaries is generally undeveloped and can be characterized as open space, with the exception of one parcel that includes 13 cabins used for Pacific Gas and Electric Company housing. Keller Ranch is located on the south side of the main stem of the Kings River and is not considered

critical to hydroelectric-operations. Keller Ranch is currently used as a parking and staging area for commercial whitewater outfitters under a lease agreement with the USFS.

The Kings River is one of 15 major rivers in the Sierra Nevada and is the sixth largest in volume and fifth largest in basin acreage. The Kings River Bundle is located within the boundaries of the Sierra National Forest, with the exception of Keller Ranch, which is bound by the Sequoia National Forest. In general, the terrain can be characterized as steep and remote. Granite domes are prominent in the higher elevation areas. In the lower elevations, the Kings River and its tributaries traverse steeply incised canyons, which are hundreds and sometimes thousands of feet high on both sides of the river. The vegetation in the region consists mainly of chaparral brush and oak woodlands in the lower foothill elevations. Ponderosa pine forests dominate the mid-elevation areas and a dense red fir canopy dominates the terrain at elevations of 6,000 to 8,500 feet.

Of the 440 acres associated with the Helms Project, 342 acres are considered forest land. Vegetation types include red fir-lodgepole pine at the higher elevations and mixed-conifer at the low to mid-elevations. Approximately 100 of the 342 acres are considered suitable for commercial harvest. Although these lands are suitable for timber management, little timber harvesting has occurred on them with the exception of salvage harvests. Harvests over the past decade have been limited to the removal of dead or hazard trees in the vicinity of power or recreation facilities. It is anticipated that a new owner might conduct a partial cut harvest on this land to recover some timber volume for five years. The lands could be used for other uses at the same time, for example, recreation, rural residential development, or open space.

Of the 1,007 acres of land associated with the Haas-Kings Project, 377 acres are considered forest land. Vegetation types include lodgepole pine, ponderosa pine and blue oak savannah. None of the land associated with the Haas-Kings Project is considered suitable for commercial harvest.

Bundle 19: Tule River

The Tule River Bundle includes one FERC-licensed project, the Tule River project, which is located in Tulare County approximately 40 miles northeast of Porterville. The nearest community is Springfield located on the Middle Fork of the Tule River approximately 12 miles southwest of the project. The project is within the boundary of the Sequoia National Forest, which lends to the recreational activities associated with the bundle area including: camping, sight-seeing, boating, kayaking, fishing, hiking, horseback riding, skiing, and resort-based activities.

Tule River Project (FERC 1333)

The Tule River Bundle includes one FERC-licensed facility, the Tule River Project. The Tule River Project is located on the North Fork of the Middle Fork of the Tule River (NFMFTR), about seven miles east of the town of Springville. Project facilities consist of the Tule River Diversion Dam, the Hossack Creek Diversion Dam, the Doyle Springs Diversion and Pump System, fish bypass facilities, flumes and tunnels, a penstock, a powerhouse, a switchyard, support buildings

and housing. Route 190 parallels the Tule River from the nearby town of Porterville and provides good access to the powerhouse. A secondary road referred to as Wishon Drive provides access to the diversion structures, as well as a recreation residence tract referred to as the Doyle Springs Homeowners Association (DSHA) and USFS recreation facilities.

In addition to divesting the hydroelectric facilities, Pacific Gas and Electric Company proposes to divest 45 acres of land with the Tule River Project. Of these, 10 acres are located within the FERC boundary and 35 are located outside of the FERC boundary. Three of the 35 acres were identified in Pacific Gas and Electric Company's Supplemental PEA as "Watershed Lands" and are located within the transmission line right-of-way, west of the hydroelectric generation facilities, and east of Springville.

For the most part, Pacific Gas and Electric Company's land within the FERC boundary is occupied by hydroelectric facilities, including the Tule River Diversion Dam, the Hossack Creek Diversion Dam and the fish bypass facilities. Pacific Gas and Electric Company's land within the FERC boundary that is not occupied by project facilities is generally undeveloped and can be characterized as open space. Pacific Gas and Electric Company's land outside the FERC boundary is mainly undeveloped, with the exception of a few recreation cabins associated with the DSHA. All of the land to the south and the west of Pacific Gas and Electric Company's property is public land managed by the Sequoia National Forest (SNF). The land bordering the north and east sides of Pacific Gas and Electric Company land is private land owned by the DSHA, and falls under the jurisdiction of Tulare County.

Of the 78 acres of land Pacific Gas and Electric Company proposes to divest with the Tule River Bundle, 78 acres of land are considered forest land. However, none of the forest land is considered suitable for timber harvest. The forest land consists mainly of low elevation pine-oak woodland. The area in the vicinity of the water diversion facilities supports mixed conifer vegetation and can be characterized as remote and rugged.

In general, the NFMFTR canyon is characterized by steep slopes covered with heavy vegetation, mainly Valley Foothill Riparian and Mountane Chaparral communities. The foothill area is vegetated mainly by Blue Oak Woodland and Blue Oak Foothill Pine Woodland communities common to the lower elevations of the Western Sierra Nevada.

Bundle 20: Kern Canyon

The Kern River Bundle includes one FERC-licensed project, the Kern Canyon project, which is located in Kern County, approximately ten to 15 miles northeast of Bakersfield and Oildale. The project is near the southwest corner of the Sequoia National Forest's Greenhorn Ranger District.

Kern Canyon Project (FERC 0178)

The Kern Canyon Bundle includes one licensed project referred to as the Kern Canyon Project. The Kern Canyon Project is located on the Lower Kern River, about ten miles east of Bakersfield. The Project diverts up to 650 cfs of water from the Kern River at a small diversion dam located about 1.6 miles upstream of the Kern Canyon Powerhouse. Water is diverted at an intake located on the north bank of the Kern River into a tunnel that carries the water to a small forebay, through a penstock to the Kern Canyon Powerhouse. Water is released from the powerhouse back into the Kern River. All of the facilities are visible from State Route 178, a primary east-west transportation route connecting the city of Bakersfield with the towns of Kernville, Lake Isabella, and towns and cities located on the east side of the Sierra.

There are no storage reservoirs associated with the Kern Canyon Project. As such, it is considered a “run-of-the-river” project. Lake Isabella, owned and operated by the U.S. Army Corps of Engineers (COE), is located about 34 miles upstream of the Project. Southern California Edison’s (SCE’s) Kern River No. 1 (KR-1) Hydroelectric Project is located immediately upstream of Pacific Gas and Electric Company’s Kern Canyon Project and the Olcese Water District’s Rio Bravo Project is located immediately downstream.

In addition to divesting the hydroelectric facilities associated with the Kern Canyon Project, Pacific Gas and Electric Company proposes to divest 664 acres of land. Of this land, 52 acres lies within the FERC boundaries and 612 lies outside the FERC boundaries. For the most part, Pacific Gas and Electric Company’s land within the FERC boundary is occupied by hydroelectric facilities. Pacific Gas and Electric Company’s land within the FERC boundary that is not occupied by hydroelectric facilities is generally undeveloped and can be characterized as open space. The balance of the lands owned by Pacific Gas and Electric Company are open space in rough terrain. All of the land to the north and east of Pacific Gas and Electric Company’s property is public land managed by the SNF. The land bordering the south and west sides of Pacific Gas and Electric Company’s land is private land under the jurisdiction of Kern County. The Kern River and Route 178 bisect Pacific Gas and Electric Company’s land from southwest to northeast.

4.1.5 STANDARDS OF SIGNIFICANCE

For the purposes of analysis of potential land use impacts, project-induced changes would only be considered significant if they result in *new uses that could be incompatible with existing or future adjacent uses*.

There are other types of criteria that can be used to determine the significance of land use impacts, but these were determined to be inappropriate for the project. Appendix G of the *CEQA Guidelines* (California Code of Regulations, Sections 15000-15387) presents several suggested criteria for evaluating land use impacts. These include a project’s potential to (a) physically divide an established community, (b) conflict with any applicable land use plan, policy, or regulation of an

agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect, and (c) conflict with any applicable habitat conservation plan or natural community conservation plan. As described below, these criteria are either inappropriate or inapplicable to the proposed project.

Because of the nature of the proposed project, it offers no substantial potential to physically divide an established community. The project includes the divestiture of hydroelectric assets and possible resultant changes in the operation of these facilities or in the management or use of associated lands. Because these assets are distributed across a large geographic area and are generally located in rural or wilderness areas, there is no potential that an established community will be physically divided. The potential changes that might occur as a result of the project would not involve the construction of any new linear facilities (e.g., highways, channels) that are capable of dividing a community. As a result, this criterion was not utilized to assess potential project impacts related to land use.

The impact analysis also does not consider potential conflicts with applicable land use plans, policies, or regulations. In order to evaluate impacts of the project, the development assumptions that form the basis of analysis for impacts associated with changes in land use often assume development levels higher than the current development limits on the land set forth in local general plans (see Section 3.10.2, Future Land Development Assumptions). This assures that some of the potential impacts associated with land use changes are not underestimated, but it also means that the basic assumptions of the EIR analysis conflict with existing local land use plans and policies. This was done in order to be conservative in evaluating the potential for impacts in other issue areas. For this reason, there is no meaningful benefit to further and in detail evaluating the project's compatibility with applicable land use plans, policies, or regulations. However, three things should be noted. First, the basic action associated with the proposed project (the transfer of hydroelectric assets to new owners) presents no apparent conflicts with local land use plans, policies, or regulations. Second, if changes in local general plans to accommodate the land use assumptions in this EIR were ultimately proposed by new owners of the hydroelectric assets, the counties deciding whether to approve such general plan amendments might identify additional inconsistencies of such amendments (and resulting development) with their general plans. Given the fact that specific locations on parcels, configurations and designs of the potential land use development is not now known, further general plan inconsistencies may be identified at that later stage when such details are available. Third, the topical impact sections within Chapter 4 of this EIR do list pertinent policies of local general plans and other regional plans dealing with the subject resources areas, and use such policies to develop standards of significance where appropriate. In that context, the analyses within Chapter 4 of this EIR address inconsistencies with such relevant policies.

Because the study area encompasses such a large geographic region with abundant rural and wilderness areas, there are various habitat conservation plans and natural community conservation

plans in effect across portions of the study area. Potential conflicts with such plans are described in Section 4.5, Terrestrial Biology.

4.1.6 ANALYTICAL METHODS

The specific assumptions for future development of Project Lands are presented in Section 3.10.2, Future Land Development Assumptions. These assumptions are also presented in summary form in the impact assessment below. Timber harvest assumptions and mining assumptions are presented in Section 3.10.3.

4.1.6.1 Impact Assessment Methodology

With the potential changes in land use in mind, the analysis of land use impacts focuses on the potential for the development of new uses that could be incompatible with existing and future adjacent uses. Incompatible adjacent land uses result when the characteristics of one land use disrupt or degrade adjacent land uses to such a degree that the functional use of the adjacent land for its existing or planned purpose is imperiled. As a result, this phenomenon tends to occur with two or more adjacent but disparate types of land uses.

One way that land uses can be considered to be incompatible can occur when the activities characteristic of one land use are considered disruptive or undesirable because they generate nuisances and conflict with activities associated with the adjacent land use. In general, “nuisance” uses include those that generate substantial noise, odor, smoke, dust, air pollutants, nighttime illumination, or traffic. Typical categories of “sensitive” land uses include residences, hospitals, parks, convalescent homes, libraries, and schools. Examples of these types of incompatible land uses include a noise-generating use (e.g., airport, mining activities) located near uses that either value or require quiet conditions (e.g., habitat area, outdoor recreation), or an odor-generating use (e.g., wastewater treatment plant) located near uses that would consider such odors offensive (e.g., residences).

Another way that land uses can be considered incompatible is when the character of activities associated with one land use is in fundamental conflict with the uses of adjacent land. In this case, much of the land adjacent to the Project Lands is publicly- or privately-owned forest. Adjacent forestlands include other privately-held property, as well as publicly-owned forestlands under the jurisdiction of the U.S. Forest Service, the Bureau of Land Management, the State Parks Department, and others. The purposes of the forestlands include protection of habitat and sensitive species, protection of water quality and quantity, provision of recreational opportunities, support of hydroelectric generation, and long-term management of timber lands. In the Setting discussions above, the specific policies of each National Forest, BLM Management Plan, and other similar plans are presented. The goals and policies of these plans generally support and reinforce the above-mentioned purposes.

This evaluation considers the aggregate effects of land use changes on the Project Lands (through land development, timber harvest, or mineral extraction) on the character of adjacent and nearby

lands in the future. The specific effects of potential land use changes on the Project Lands are considered in the myriad sections of Chapter 4. This assessment considers the combined effect of the impacts associated with different environmental resources, and assesses where the aggregation of numerous environmental effects, some or all of which may individually be considered less-than-significant, could result in a fundamental change in the character of the land and, secondarily result in incompatible land uses. The evaluation of incompatible land uses reflects the goals and policies of various land-owning entities for the long-term management of public and private forestlands. As a result, in cases where Project-induced land development, timber harvest, or mineral extraction activities could change the character of Project Lands, in terms of a variety of factors such as effects to terrestrial biology, aesthetics, noise generation, demand for public services, traffic generation, and the like, the EIR concludes that such land development, timber harvest, or mineral extraction could result in uses that could be incompatible with adjacent forestland uses.

Given the lack of specific details at this time concerning the configuration and design of potential development resulting from the project, only a generalized analysis of the potential for incompatible adjacent land uses is possible at this time.

4.1.6.2 Other Types of Impacts Caused by Land Use Changes

Substantial land use changes can result in a wide variety of different types of impacts, usually as a result of new land development. Examples include impacts on visual character, wildlife, vegetation, traffic, air quality, and public services. For discussions of these and other types of impacts associated with the potential future development of project lands, the reader is referred to other sections in Chapter 4 (Environmental Setting, Impacts, and Mitigation Measures) addressing individual impact topics.

4.1.7 INTRODUCTION TO IMPACTS AND MITIGATION MEASURES

For Land Use, one impact has been identified:

- Impact 1-1: New uses on project lands could be substantially incompatible with existing and planned adjacent uses (Significant).

Where impacts are significant, mitigation measures are recommended at the conclusion of the analysis of each impact.

4.1.8 IMPACT, ANALYSIS, AND MITIGATION MEASURES

Impact 1-1: New uses on project lands could be substantial incompatible with existing and planned adjacent land uses. (Significant Impact)

4.1.8.1 Impact 1-1: Shasta Regional Bundle

Bundle 1: Hat Creek

The estimated development potential for the Hat Creek Bundle is 594 equivalent dwelling units (EDUs). Adjacent land uses include town activities surrounding the small town of Cassel, rural residential, recreation including the Pacific Coast Trail, and Forest Service land uses. The surrounding rural residential areas and adjacent recreational uses could potentially be disturbed by future development of the Land Area. Key significant impacts of land development on Project Lands in the Hat Creek bundle could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, plants and mammals;
- Impacts to recreation access to Hat Creek and the Pit River;
- Impacts to unknown cultural resources; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Hat Creek Bundle could fundamentally change the use of the land. This change could be incompatible with sensitive uses in the adjacent Lassen and Shasta-Trinity National Forests, including dispersed wilderness recreation.

As a result of the potential incompatible land uses that could result in the Hat Creek Land Area, this impact is considered *significant* for the Hat Creek Bundle.

Bundle 2: Pit River

The assumed land development potential in the Pit River Bundle is 1,826 EDUs on 31,182 acres of land in the following five Land Areas. The potential for mining has also been identified between Pit 1 and Pit 3 Powerhouses.

Pit 1 Land Area

The assumed development potential in the Pit 1 Land Area is 714 EDUs on 3,568 acres. Adjacent land uses include town activities surrounding the small town of Fall River Mills, rural residential, recreation, and Forest Service land uses.

McArthur Swamp Land Area

The assumed development potential in the McArthur Swamp Land Area is 17 EDUs on 6,135 acres. Existing land uses adjacent to the McArthur Swamp Land Area include rural residential, grazing, recreation including Ahjumawi Lava Springs Campground, and Forest Service land uses.

Pit 3 Land Area

The assumed development potential in the Pit 3 Land Area is 736 EDUs on 3,681 acres. Existing adjacent land uses include recreation, Forest Service land uses, and sand mining.

Lake Britton Land Area

The assumed development potential in the Lake Britton Land Area is 264 EDUs on 2,636 acres. Existing adjacent land uses in the Lake Britton Land Area include recreation and habitat protection at Burney Falls State Park, rural residential uses south of Lake Britton, and Forest Service uses to the north.

McCloud, Black, Pit Land Area

The assumed development potential in the McCloud, Black, Pit Land Area is 95 EDUs on 15,162 acres. For the McCloud-Pit Land Area, adjacent land use is primarily timber management. Limited rural residences occur throughout the Land Area. Various land uses also occur in the small town of Big Bend.

The potential for new land development or mineral extraction activities to change the character of land uses to the extent that it could be incompatible with adjacent land uses occurs with the Pit 1, Pit 3 and Lake Britton Land Areas. In the Pit 1 Land Area, existing adjacent land uses include town activities surrounding the small town of Fall River Mills, rural residential, recreation, and Forest Service land uses. The surrounding rural residential areas and adjacent recreational uses are considered sensitive land uses that could potentially be disturbed or degraded by future development of the Pit 1 Land Area. In the Pit 3 Land Area, diatomite and aggregate resources have been identified along the Pit River. Existing adjacent land uses include recreation, Forest Service land uses, and sand mining. Existing adjacent land uses in the Lake Britton Land Area include recreation and habitat protection at Burney Falls State Park, rural residential uses south of Lake Britton, and Forest Service uses to the north. The surrounding rural residential areas, habitat protection areas, and adjacent recreational uses are considered sensitive land uses that could potentially be disturbed or degraded by future development of the Land Area.

Key significant impacts of land development on Project Lands in the Pit River Bundle could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, plants and mammals;
- Impacts to recreation access to the Pit River and Lake Britton, as well as impacts to access to the Pacific Crest Trail as it crosses the Pit 3 Dam;
- Impacts to unknown cultural resources;
- Impacts to the provision of local public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
Environmental Impacts of Land Development				Land development may result in adverse effects to wildlife and plant species (see section 4.5.7).	Land development could substantially diminish existing water-based and land-based recreation opportunities (see section 4.6.7).	Land development could result in the damage or destruction of known and/or unknown cultural resources (see section 4.7.7).	Land development could expose public or workers to contaminated soil and or groundwater (see section 4.9.7).	Land development could result in substantial adverse impacts on local public services and utilities providers (see section 4.11.7).	Land development could cause increased vehicular trips (see section 4.12.8).	Land development could contribute substantial noise levels above the existing ambient noise conditions (see section 4.13.9).	Land development could contribute substantial emissions to the local air basin (see section 4.14.9).	Land development could substantially degrade visual character (see section 4.15.7).	Land development could be subject to fault rupture, groundshaking active faults, increased soil erosion or mass wasting, and soil instability (see section 4.16.9).
Shasta		43,636	3,036										
	Hat Creek	2,969	594	Significant for TES* habitat and sensitive invertebrates, birds, plants, and mammals	Significant impacts to water-based recreation related to access to Hat Creek and Pit River.	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for parks	Significant increase in vehicle trips		Significant for ROG, PM10, and CO	Significant degradation of visual character	Significant for fault rupture/groundshaking and soil erosion/mass wasting
	Pit River	31,182	1,826	Significant for TES* habitat and sensitive invertebrates, birds, plants, and mammals	Significant for water-based recreation related to access to Pit River, and Lake Britton; and land-based recreation on one parcel near lake Britton, and Pacific	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for parks	Significant increase in vehicle trips		Significant for ROG, PM10, and CO	Significant degradation of visual character	Significant for fault rupture/groundshaking, soil erosion/mass wasting, and soil instability

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential										
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity	
					Crest Trail easement on Pit 3 Dam.									
	Kilarc-Cow Creek	2,603	20	Significant for TES* habitat and sensitive invertebrates, birds, plants, and mammals		Significant for potential effects to unknown cultural resources		Significant for parks						Significant for soil erosion/mass wasting and soil instability
	Battle Creek	6,882	596	Significant for TES* habitat and sensitive invertebrates, birds, plants, and mammals		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for parks	Significant increase in vehicle trips		Significant for ROG, PM10, and CO	Significant degradation of visual character	Significant for soil erosion/mass wasting	
DeSabra		18,039	2,099											
	Hamilton Branch	2,151	35	Significant for sensitive birds, plants, and mammals	Significant for water-based recreation related to fishing access to Lake Almanor; and for land-based recreation related to	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for police services, public schools, and parks					Significant for soil erosion/mass wasting	

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
					access to lands around Mtn. Meadows Reservoir.								
	Feather River	11,062	1,376	Significant for sensitive invertebrates, amphibians, birds, plants, and mammals	Significant for water-based recreation related to fishing access to North Fork Feather River; and for land-based recreation related to access to Last Chance Campground and access to informal camping areas along NFFR.	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for police services, public schools, and parks	Significant increase in vehicle trips		Significant for CO, ROG, NOx, PM 10	Significant degradation of visual character	Significant for soil erosion/mass wasting
	Bucks Creek	1,222	244	Significant for sensitive invertebrates, amphibians, birds, plants, and mammals		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for police services, public schools, and parks	Significant increase in vehicle trips		Significant for CO, ROG, NOx, PM 10	Significant degradation of visual character	Significant for soil erosion/mass wasting and soil instability

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
	Butte Creek	3,604	444	Significant for sensitive invertebrates, amphibians, birds, plants, and mammals		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for police services, public schools, and parks			Significant for CO, ROG, NOx, PM 10		Significant for soil instability
Drum		22,440	4,071										
	North Yuba River	64	3	Significant for TES* habitat and sensitive invertebrates, amphibians, and birds		Significant for potential effects to unknown cultural resources		Significant for parks					
	Potter Valley	5,822	201	Significant for TES* and sensitive amphibians, birds, and plants)		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for parks	Significant increase in vehicle trips				Significant for fault rupture/grounds haking
	South Yuba River	16,369	3,863	Significant for TES* habitat, and sensitive invertebrates, birds, and mammals	Significant for water-based recreation related to access to Grouse Lakes Vehicle Control Area, Lake Crossing and Lake Spaulding; and land-based recreation related to access to Lindsey Lake Trail, Eagle Mountain	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for fire protection, police protection, public schools, and parks	Significant increase in vehicle trips		Significant for CO, ROG, NOx, PM 10	Significant degradation of visual character	Significant for soil erosion/mass wasting and soil instability

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
					Resort, Emeralds Climbing Area, Pioneer Trail, and Golden Quartz Trail.								
	Chili Bar	158	4	Significant for TES* habitat, and sensitive invertebrates, birds, and plants		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination						
Motherlode		7,817	319										

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential										
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity	
	Moke-lumne River	6,100	271	Significant for TES* habitat, and sensitive invertebrates, amphibians, birds, and mammals	Significant for water-based recreation related to land use conflicts at Lower Blue Lake, Twin Lake, and Meadow Lake, Upper Bear River; and access to Tiger Creek Afterbay, Electra Afterbay, and Panther Creek; and for land-based recreation related to trails to access wilderness area from Upper Blue Lake, and transit of Pacific Crest Trail across lands; incompatible land use with Mokelumne Wilderness Area, hunting access to Mokelumne River.	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for fire protection and parks		Significant increase in vehicle trips		Significant for PM10	Significant degradation of visual character	

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential										
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity	
	Stanislaus River	1,709	47	Significant for TES* habitat, and sensitive invertebrates, amphibians, reptiles, birds, and mammals	Significant for water-based recreation related to access to Middle Fork Stanislaus River, and Lyons Dam; and for land-based recreation related to trail to Emigrant Wilderness, access along Beardsley Trail, land use incompatibilities (viewshed) near Spring Gap Powerhouse, and access along Sugar Pine Railroad Trail.	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for public schools and parks						
	Merced River	8	1	Significant for TES* habitat, and sensitive amphibians reptiles, birds, and mammals	Significant for water-based recreation related to access to Merced Falls Reservoir	Significant for potential effects to unknown cultural resources		Significant for parks						

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
Kings Crane-Helms		2,784	701										
	Crane Valley	1,004	380	Significant for TES* habitat and sensitive birds and plants		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for fire protection, police protection, public schools, and parks	Significant increase in vehicle trips		Significant for ROG, CO, PM10	Significant degradation of visual character	
	Kerckhoff	200	93	Significant for TES* habitat and sensitive birds, plants, and mammals		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for fire protection, police protection, public schools, and parks	Significant increase in vehicle trips			Significant degradation of visual character	
	Kings River	871	153	Significant for TES* habitat and sensitive plants	Significant for water-based recreation related to whitewater rafting lease at Keller Ranch	Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for fire protection, police protection, public schools, and parks	Significant increase in vehicle trips			Significant degradation of visual character	
	Tule River	45	45	Significant for TES* habitat and sensitive plants		Significant for potential effects to unknown cultural resources	Significant for potential exposure to contamination	Significant for public schools, and parks				Significant degradation of visual character	
	Kern Canyon	664	30	Significant for sensitive plants		Significant for potential effects to unknown cultural resources		Significant for public schools, and parks					

Table 4.1-28 Summary of Significant Impacts of Land Development

Regional Bundle	Bundle	Acres	EDUs	Key Impacts due to Land Development Potential									
				Terrestrial Biology	Recreation	Cultural Resources	Hazards and Hazardous Materials	Public Services and Utilities	Transportation	Noise	Air Quality	Aesthetics	Geology and Seismicity
System Totals		94,716	10,226										
Notes:	* - TES: State and/or federally-listed threatened and endangered species.												

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Pit River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with adjacent uses.

Existing land uses adjacent to the McArthur Swamp Land Area include rural residential, grazing, recreation including Ahjumawi Lava Springs Campground, and Forest Service land uses. For the McCloud-Pit Land Area, adjacent land use is primarily timber management. Limited rural residences occur throughout the Land Area. Various land uses also occur in the small town of Big Bend. Because of the existing character of land uses and the low intensity of assumed future land use changes, the development of incompatible existing and future land uses resulting from the degradation or disturbance of existing land uses are not expected in the McArthur Swamp or McCloud-Pit Land Areas.

As a result of the potential incompatible land uses that could result in the Pit 1, Pit 3 and Lake Britton Land Areas, this impact is considered *significant* for the Pit River Bundle.

Bundle 3: Kilarc-Cow Creek

The assumed development potential for the 2,603-acre Kilarc-Cow Creek Land Area is 20 EDUs. Adjacent land uses include rural residential, grazing activities, and a minimal amount of dispersed recreation. Most of the surrounding land is in private ownership. A large amount of developed recreation occurs in nearby local, State, and national recreation facilities.

Even with relatively low levels of potential land development, certain key significant impacts could occur if the development is not well and sensitively planned. Such impacts could include:

- Impacts to sensitive habitat and species of invertebrates, amphibians, birds and plants;
- Impacts to unknown cultural resources; and
- Impacts to the provision of local public parks.

The above-described significant impacts could be caused by even a limited amount of development. However, because of the very low intensity of assumed land development, and the fact that adjacent lands are privately held, it is unlikely that future uses on the Project Lands could be compatible with adjacent land uses. Therefore, this impact is considered *less than significant*.

Bundle 4: Battle Creek

The assumed development potential for the 6,882-acre Battle Creek Bundle is 596 EDUs in the following two Land Areas.

Shingletown Land Area

The assumed development potential for the Shingletown Land Area is 558 EDUs on 5,528 acres. Adjacent land uses include the town of Shingletown, rural residential, dispersed recreation, and Forest Service uses.

Inskip Land Area

The assumed development potential for the Inskip Land Area is 38 EDUs on 1,354 acres. Adjacent land uses include rural residential, grazing activities, and dispersed recreation.

The surrounding rural residential areas and adjacent recreational uses are considered sensitive land uses that could potentially be disturbed or degraded by future development of the Land Area. Key significant impacts of land development on Project Lands in the Battle Creek Bundle could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, plants and mammals;
- Impacts to recreation access to the Pit River and Lake Britton, as well as impacts to access to the Pacific Crest Trail as it crosses the Pit 3 Dam;
- Impacts to unknown cultural resources;
- Impacts to the provision of local public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Battle Creek Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed for public trust purposes.

As a result of the potential incompatible land uses that could result in the Shingletown Land Area, this impact is considered *significant* for the Battle Creek Bundle.

Summary of Impact 1-1: Entire Shasta Regional Bundle

The assumed development potential of Project Lands in the Shasta Regional Bundle is 3,036 EDUs on 43,636 acres. Existing adjacent land uses such as rural residences, wilderness recreational uses, and forestlands managed by public agencies for public trust values, particularly within the Pit River Bundle, could potentially be disturbed or degraded by future development of Project Lands in the Hat Creek, Pit River, and Battle Creek Bundles. Therefore, this potential for the development of incompatible land uses in the Shasta Regional Bundle is considered a *significant* impact.

4.1.8.2 Impact 1-1: DeSabra Regional Bundle

Bundle 5: Hamilton Branch

The assumed development potential for the 2,151 acres of Project Lands in the Hamilton Branch Bundle is 35 EDUs, in the following two Land Areas.

Mountain Meadows Land Area

The assumed development potential in the Mountain Meadows Land is 19 EDUs on 1,912 acres. Existing adjacent land uses in the Mountain Meadows Land Area include dispersed recreation, uses associated with the town of Chester, and habitat protection.

Hamilton Branch Land Area

The assumed development potential in the Hamilton Branch Land Area is 19 EDUs on 239 acres. Land uses adjacent to the Hamilton Branch Land Area include residential, recreation, and timber management. While there is development potential in this area, the size and location of the parcels precludes substantial amounts or higher densities of development.

The bulk of the land around the Land Areas in the Hamilton Branch Bundle is privately-owned forest lands. In some locations adjacent lands include residential and commercial resort uses. Key significant impacts of land development on Project Lands in the Hamilton Branch bundle could include:

- Impacts to sensitive habitats and species of birds, plants and mammals;
- Impacts to fishing access to Lake Almanor, as well as to access to lands around Mountain Meadows Reservoir;
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to soil erosion.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Hamilton Branch Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands.

As a result of the changes and associated environmental effects described above, land use impacts in the Hamilton Branch Bundle are considered *significant*.

Bundle 6: Feather River

The assumed development potential for the Feather River Bundle is 1,376 EDUs on 11,062 acres, in the following seven Land Areas.

North Lake Almanor Land Area

The assumed development potential for the North Lake Almanor Land Area is 87 EDUs on 866 acres. Existing adjacent land uses include timber management and dispersed recreation.

West Lake Almanor Land Area

The assumed development potential for the West Lake Almanor Land Area is 276 EDUs on 276 acres. Adjacent uses include residential and recreational resort activities and forest service management.

Southeast Lake Almanor Land Area

The assumed development potential for the Southeast Lake Almanor Land Area is 615 EDUs on 1,230 acres. Adjacent uses include timber management, forest service management, recreation, and residential uses.

Butt Valley Reservoir Land Area

The assumed development potential for the Butt Valley Reservoir Land Area is 92 EDUs on 920 acres. Adjacent uses include timber management, Forest Service management, and recreation.

Caribou to Belden Land Area

The assumed development potential for the Caribou and Belden Area is 16 EDUs on 370 acres. Adjacent uses include forest service management and recreation, and residences in Caribou and Belden.

Humbug Valley Land Area

The assumed development potential for the Humbug Valley Land Area is 240 EDUs on 2,402 acres. Adjacent uses include Forest Service management, recreation, grazing, and limited rural residential uses.

Rock Creek-Cresta Land Area

The assumed development potential for the Rock Creek-Cresta Land Area is 17 EDUs on 6,135 acres. Adjacent uses include Forest Service management, recreation, and residences in Storrie and Tobin. Existing adjacent land uses include rural residential, grazing, limited recreation, and Forest Service land uses.

Poe Land Area

The assumed development potential for the Poe Land Area is 31 EDUs on 3,823 acres. Adjacent uses include timber management, Forest Service management, and rural residential uses.

Much of the land adjacent to and in the vicinity of the Feather River Bundle is managed for public trust values by the National Forest Service in Lassen and Plumas National Forest. In addition, there are various other key open space values that are managed in the Bucks Lake Wilderness Area and the Chips Creek Roadless Area. Key significant impacts of land development on Project Lands in the Feather River Bundle could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, plants and mammals;
- Impacts to fishing access to the North Fork Feather River, as well as to access to Last Chance Campground and informal camping areas along the North Fork Feather River;
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Feather River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed for public trust purposes.

As described above, in the Feather River Bundle, land uses could be developed that could be incompatible with adjacent uses. This is particularly the case in those Land Areas (including North Lake Almanor, West Lake Almanor, Southeast Lake Almanor, Butt Valley Reservoir, and Humbug Valley) that are adjacent to lands managed to further public trust values. Therefore, this potential for the development of incompatible land uses in the Feather River Bundle is considered a *significant* impact.

Bundle 7: Bucks Creek

The assumed development potential for the Bucks Creek Land Area is 244 EDUs on 1,222 acres. Adjacent land uses include town activities surrounding the small resort centers of Haskins Resort and Bucks Lodge, resort residential surrounding the lake, rural residential, recreation and Forest Service land uses, including the Plumas National Forest, the Bucks Lake Wilderness Area and the Pacific Crest Trail.

Much of the land adjacent to and in the vicinity of the Bucks Creek Bundle is managed for public trust values by the National Forest Service in Plumas National Forests. In addition, there are various other key open space values that are managed in the Bucks Lake Wilderness Area and

associated with the Pacific Crest Trail. Key significant impacts of land development on Project Lands could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, and plants;
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle;
- Impacts of soil erosion and soil instability; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Bucks Creek Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, there exists in the Bucks Creek Bundle the potential for the development of land uses that could be incompatible with adjacent uses that are adjacent to lands managed for public trust purposes. Therefore, this potential for the development of incompatible land uses in the Bucks Creek Bundle is considered a *significant* impact.

Bundle 8: Butte Creek

The assumed development potential for the Butte Creek Bundle is 444 EDUs on 3,604 acres in the following two Land Areas.

DeSabra-Centerville Land Area

The assumed development potential for the DeSabra-Centerville Land Area is 66 EDUs on 6,135 acres. Adjacent land uses include rural residential, recreation, timber management, and public lands management.

Coal Canyon Land Area

The assumed development potential for the Coal Canyon Land Area is 378 EDUs on 1,133 acres. Adjacent land uses include city uses in Oroville, residential, and recreation.

For the most part, the lands adjacent to the Butte Creek Bundle are used for wilderness recreation, with some limited rural residential and timber management uses. The development potential on the Project Lands in the Battle Creek Bundle could result in an array of impacts such as:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, and mammals;
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle; and

- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Butte Creek Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the Butte Creek Bundle. Therefore, this potential for the development of incompatible land uses in the Butte Creek Bundle is considered a *significant* impact.

Summary of Impact 1-1: Entire DeSabra Regional Bundle

The assumed development potential in the DeSabra Regional Bundle includes 2,099 EDUs on 18,039 acres. Existing adjacent lands are in uses such as residences, recreational uses, and forestlands. In many areas, these adjacent lands are managed by public agencies for public trust values including wilderness recreation, habitat protection, and the like. As a result, development on Project Lands could be incompatible with the uses on adjacent lands. Therefore, this potential for the development of incompatible land uses in the DeSabra Regional Bundle is considered a *significant* impact.

4.1.8.3 Impact 1-1: Drum Regional Bundle

Bundle 9: North Yuba River

The assumed development potential in the Narrows-Lake Englebright Land Area is three EDUs on 64 acres of Project lands. Existing adjacent land uses are forests and timber lands owned by BLM and private parties. Key significant impacts of land development on project lands in the Yuba River Bundle could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, and birds;
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. Given existing surrounding land use, existing Timber Production designations, and the low level of assumed development, future use of Project Lands would most likely be compatible with existing land use types in the area, such as timber harvesting, with some outdoor activities incidental to and associated with forest lands. Notwithstanding the environmental effects, it is unlikely that the levels of development assumed to

occur in the North Yuba River Bundle could fundamentally change the character of the land or be incompatible with adjacent uses.

Therefore, this potential for the development of incompatible land uses in the North Yuba Bundle is considered a *less-than-significant* impact.

Bundle 10: Potter Valley

The assumed development potential for the Potter Valley Bundle is 201 EDUs on 5,822 acres in the following two Land Areas.

Van Arsdale Reservoir/Potter Valley Powerhouse Land Area

The assumed development potential for the Van Arsdale Reservoir/Potter Valley Powerhouse Land Area is 13 EDUs on 2,057 acres. Existing adjacent land uses predominantly consist of forestlands, agriculture, outdoor recreational activities at Van Arsdale Reservoir.

Lake Pillsbury Land Area

The assumed development potential for the Lake Pillsbury Land Area is 188 EDUs on 3,765 acres. Existing adjacent land uses predominantly consist of outdoor recreational activities and some sparse rural residential uses located on the northeast portion of Lake Pillsbury.

Most of the land in the immediate vicinity of the Potter Valley Bundle is undeveloped and is either privately owned or part of the Mendocino National Forest. The BLM administers approximately 640 acres of land west of the Project lands. As is noted above in Setting, the Mendocino National Forest is managed for a variety of uses, including recreation, habitat protection, and timber, water and grazing. Wilderness areas are managed to avoid human impacts.

The assumed development potential on Project Lands in the Potter Valley Bundle could result in impacts such as:

- Impacts to sensitive habitats and species of amphibians, birds, and plants;
- Impacts to unknown cultural resources;
- Impacts to the provision of local public parks;
- Impacts due to increased vehicle trips; and
- Impacts of groundshaking and fault rupture.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Potter Valley Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the Potter Valley Bundle. Therefore, this potential for the development of incompatible land uses in the Potter Valley Bundle is considered a *significant* impact.

Bundle 11: South Yuba River

The assumed development potential for the South Yuba River Bundle is 3,863 EDUs on 16,369 acres in the following ten Land Areas.

Kidd Lake/Cascade Lakes Land Area

The assumed development potential for the Kidd Lake/Cascade Lakes Land Area is 38 EDUs on 192 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Meadow Lake/Fordyce Lake/Lake Sterling/White Rock Lake Land Area

The assumed development potential for the Meadow Lake/Fordyce Lake/Lake Sterling/White Rock Lake Land Area is seven EDUs on 1,167 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Rock Lake/Lindsey Lakes Land Area

The assumed development potential for the Rock Lake/Lindsey Lakes Land Area is five EDUs on 763 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Lake Valley Reservoir Land Area

The assumed development potential for the Lake Valley Reservoir Land Area is 329 EDUs on 1,645 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Lake Spaulding/Drum Penstock Forebay Land Area

The assumed development potential for the Lake Spaulding/Drum Penstock Forebay Land Area is 2,396 EDUs on 9,585 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Dutch Flat – Bear River North of Rollins Reservoir Land Area

The assumed development potential for the Dutch Flat – Bear River North of Rollins Reservoir Land Area is 517 EDUs on 2,067 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Rollins Reservoir/Bear River Land Area

The assumed development potential for the Rollins Reservoir/Bear River Land Area is 12 EDUs on 47 acres. Existing adjacent land uses predominantly consist of wilderness forestlands with limited dispersed recreational activities.

Halsey Forebay/Lake Arthur Land Area

The assumed development potential for the Halsey Forebay/Lake Arthur Land Area is 357 EDUs on 713 acres. Existing adjacent land uses predominantly consist of wooded forest lands, some limited dispersed residential and agricultural uses, the Auburn Municipal Airport, and the nearby I-80 corridor.

Rock Creek Lake/Auburn Land Area

The assumed development potential for the Rock Creek Lake/Auburn Land Area is 198 EDUs on 198 acres. Existing adjacent land uses predominantly consist of the Dewitt State Hospital, single and multi-family residences, the UP Railroad right-of-way, and some dispersed agricultural uses.

Folsom Lake Land Area

The assumed development potential for the Folsom Lake Land Area is four EDUs on four acres. Existing adjacent land uses are predominantly agricultural grazing lands and wooded oak forest.

The South Yuba River Bundle has the highest assumed development potential within the Drum Regional Bundle, in large part due to its proximity to Interstate 80, the major transportation corridor across the central Sierra Nevada, proximity to key recreational features such as Lake Spaulding and the Lake Tahoe area ski resorts, and proximity to key urban areas in Auburn and Truckee.

The assumed development potential on Project Lands in the South Yuba River Bundle could result in impacts such as:

- Impacts to sensitive habitats and species of invertebrates, birds, and mammals;
- Impacts to access to Grouse Lakes Vehicle Control Area, Lake Crossing, and Lake Spaulding, as well as access to Lindsey Lake Trail, Eagle Mountain Resort, Emeralds Climbing Area, Pioneer Trail, and Golden Quartz Trail.
- Impacts to unknown cultural resources;
- Impacts to the provision of local police protection, fire protection, public schools, and public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the South Yuba River Bundle could fundamentally change the use of the land. In light of this change in use and the

associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the South Yuba River Bundle. Therefore, this potential for the development of incompatible land uses in the South Yuba River Bundle is considered a *significant* impact.

Bundle 12: Chili Bar

The assumed development potential in this bundle is four EDUs on 158 acres of lands in the American River-Chili Bar/Slab Creek Reservoirs Land Area. Existing adjacent land uses predominantly consist of wilderness lands in Eldorado National Forest, and the Sacramento Municipal Utilities District's White Rock Powerhouse.

It should be noted that the California Supreme Court nullified the El Dorado County General Plan Update, and the EIR on El Dorado County's 1996 General Plan Update was successfully challenged. The County is currently in the process of preparing additional analyses and revisions to the General Plan Update to accommodate the specific deficiencies in the EIR and General Plan identified by the court. In addition, the voters of El Dorado County recently passed an initiative entitled "Measure Y" that requires certain levels of service on roadways within El Dorado County to be maintained in the future. Implementation of Measure Y and pending revisions to the General Plan will directly influence the extent and nature of future development in the County.

The assumed development potential in this bundle is very low. This reflects the relatively remote and difficult to develop character of the land. Key significant impacts of land development on Project Lands in the Chili Bar Bundle could include:

- Impacts to sensitive habitats and species of invertebrates, birds, and plants;
- Impacts to unknown cultural resources; and
- Impacts to the provision of local public services.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Chili Bar Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

Notwithstanding the relatively low level of development assumed in this bundle, the potential exists for that development to be incompatible with adjacent uses due to the types of impacts that could be generated. Those impacts could be inconsistent with the planned and intended public trust uses of the El Dorado National Forest and the policies of the El Dorado National Forest Plan. Therefore,

this potential for the development of incompatible land uses in the South Yuba River Bundle is considered a *significant* impact.

Summary of Impact 1-1: Entire Drum Regional Bundle

The assumed development potential in the Drum Regional Bundle includes 4,071 EDUs on 22,440 acres. Existing adjacent lands are in uses such as residences, recreational uses, and forestlands, including National Forest and other public lands. In many areas, these adjacent lands are managed by public agencies for public trust values including wilderness recreation, habitat protection, and the like. As a result, development on Project Lands in the Potter Valley, South Yuba River, and Chili Bar Bundles could be incompatible with the uses on adjacent lands. Therefore, this potential for the development of incompatible land uses in the Drum Regional Bundle is considered a *significant* impact.

4.1.8.4 Motherlode Regional Bundle

Bundle 13: Mokelumne River

The assumed development potential for the Mokelumne River Bundle is 271 EDUs on 6,100 acres in the following five Land Areas.

Tiger Creek Reservoir and Facilities Land Area

The assumed development potential for the Tiger Creek Reservoir and Facilities Land Area is 11 EDUs on 1,752 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the El Dorado National Forest, and some limited private timber lands.

Electra Tunnel/West Point Powerhouse Land Area

The assumed development potential for the Electra Tunnel/West Point Powerhouse Land Area is five EDUs on 752 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the El Dorado National Forest, and some limited private timber lands.

Lake Tabeaud/Electra Powerhouse Land Area

The assumed development potential for the Lake Tabeaud/Electra Powerhouse Land Area is 150 EDUs on 752 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the El Dorado National Forest, and some limited private timber lands.

Bear River Reservoir/Lower Bear River Reservoir/Salt Springs Land Area

The assumed development potential for the Bear River Reservoir/Lower Bear River Reservoir/Salt Springs Land Area is 38 EDUs on 1,506 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the El Dorado National Forest, and some limited private timber lands.

Upper and Lower Blue Lakes/Meadow Lake/Twin Lake Land Area. The assumed development potential for the Upper and Lower Blue Lakes/Meadow Lake/Twin Lake Land Area is 67 EDUs on 1,338 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the El Dorado National Forest, and some limited private timber lands.

Project Lands in this bundle are surrounded by National Forest and private forestlands that are designated for timber production or timber preservation.

The assumed development potential on Project Lands in the Mokelumne River Bundle could result in impacts such as:

- Impacts to sensitive habitats and species of invertebrates, amphibians, birds, and mammals;
- Impacts related to potential land use conflicts at Lower Blue Lake, Twin Lake, Upper Meadow Lake, and Upper Bear River Reservoir; and impacts to access to Tiger Creek Afterbay, Electra Afterbay, and Panther Creek;
- Impacts related to loss of access to the Emigrant Wilderness Area from Upper Blue Lake, and transit of the Pacific Crest Trail across Project Lands.
- Impacts to unknown cultural resources;
- Impacts to the provision of local fire protection and public parks;
- Impacts to the visual character of the land in the bundle; and
- Impacts due to increased vehicle trips, as well as associated air quality impacts.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Mokelumne River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the Mokelumne River Bundle. Therefore, this potential for the development of incompatible land uses in the Mokelumne River Bundle is considered a *significant* impact.

Bundle 14: Stanislaus River

The assumed development potential for the Stanislaus River Bundle is 47 EDUs on 1,709 acres in the following two Land Areas.

Stanislaus River Land Area

The assumed development potential for the Stanislaus River Land Area is 37 EDUs on 1,362 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the Stanislaus National Forest, including the Emigrant Wilderness Area. Yosemite National Park is approximately ten miles south of the Project lands in this Land Area.

Lyons Reservoir/Phoenix Reservoir Land Area

The assumed development potential for the Lyons Reservoir/Phoenix Reservoir Land Area is ten EDUs on 347 acres. Existing adjacent land uses predominantly consist of wilderness forestlands in the Stanislaus National Forest, and some limited private grazing lands.

It should be noted that development of new structures on the Project lands could be difficult due to strict requirements and severe restrictions of the County's Fire Prevention Bureau (Tuolumne County, 2000).

The assumed development potential on Project Lands in the Stanislaus River Bundle could result in impacts such as:

- Impacts to sensitive habitats and species of invertebrates, amphibians, reptiles, birds, and mammals;
- Impacts to access to the Middle Fork Stanislaus River, Lyons Dam, and the trail to Emigrant Wilderness, and access along Beardsley Trail and the Sugar Pine Railroad Trail;
- Impacts to unknown cultural resources; and
- Impacts to the provision of local public schools and public parks.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Stanislaus River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the Stanislaus River Bundle. Therefore, this potential for the development of incompatible land uses in the Stanislaus River Bundle is considered a *significant* impact.

Bundle 15: Merced River

The assumed development potential for the Merced River Bundle is one EDU on eight acres of land in the Merced Falls Land Area.. Existing land uses surrounding the Merced River Bundle consist mainly of low rolling riverfront grasslands that have previously been disturbed by mining and other development. There are rural residences in the Merced River valley and recreational development at the nearby Lake McSwain. Lands within this area are Land Conservation Areas under Williamson Act contract, and therefore their development is unlikely until these contracts expire (Merced County, 2000).

Key significant impacts of this land development on project Lands in the Merced River Bundle could include:

- Impacts to sensitive habitats and species of amphibians, reptiles, birds, and mammals;
- Impacts to access Merced Falls Reservoir;

- Impacts to unknown cultural resources; and
- Impacts to the provision of local public parks.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. Notwithstanding these effects, it is unlikely that the levels of development assumed to occur in the Merced River Bundle could fundamentally change the character of the land or be incompatible with adjacent uses.

The significant impacts described above could be caused by even a limited amount of development. However, because only one unit could be developed on the Project Lands in this bundle, and given the relatively disturbed nature of lands and uses on adjacent and nearby lands, it is unlikely that development on lands in the Merced River Bundle could be incompatible with adjacent land uses. Therefore, this potential for the development of incompatible land uses in the Merced River Bundle is considered a *less-than-significant* impact.

Summary of Impact 1-1: Entire Motherlode Regional Bundle

The assumed development potential in the Motherlode Regional Bundle includes 319 EDUs on 7,817 acres. Existing adjacent lands are in uses such as residences, recreational uses, and forestlands, including National Forest and other public lands. In many areas, these adjacent lands are managed by public agencies for public trust values including wilderness recreation, habitat protection, and the like. As a result, development on Project Lands in the Mokelumne River and Stanislaus River Bundles could be incompatible with the uses on adjacent lands. Therefore, this potential for the development of incompatible land uses in the Motherlode Regional Bundle is considered a *significant* impact.

4.1.7.5 Kings Crane-Helms Regional Bundle

Bundle 16: Crane Valley

The assumed development potential for the Crane Valley Bundle is 380 EDUs on 1,004 acres in the following four Land Areas.

Bass Lake Land Area

The assumed development potential for the Bass Lake Land Area is 104 EDUs on 208 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sierra National Forest, and private lands in open space and recreation facilities.

Lake Manzanita Land Area

The assumed development potential for the Stanislaus River Land Area is 246 EDUs on 492 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sierra National Forest, and private rural residential lands with about one dwelling unit per four acres.

San Joaquin Powerhouse 2 Land Area

The assumed development potential for the Stanislaus River Land Area is 24 EDUs on 243 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sierra National Forest, and private lands in open space and recreation facilities.

A.G. Wishon Powerhouse Land Area

The assumed development potential for the Stanislaus River Land Area is six EDUs on 61 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sierra National Forest, and private lands in open space and recreation facilities.

As described above, most of the land surrounding the Crane Valley Bundle is forestland in the Sierra National Forest. The stated goals of the Sierra National Forest Plan are to provide recreation and hydroelectric generation, preserve visual resources, protect wilderness areas fisheries, wildlife and other natural and cultural resources. Land uses developed on Project Lands could be incompatible with adjacent land uses. Key significant impacts of land development on project Lands in the Crane Valley Bundle could include:

- Impacts to sensitive habitats and species of birds, and plants;
- Impacts to unknown cultural resources;
- Impacts to the provision of local fire protection, police protection, public schools, and public parks;
- Impacts of increased vehicular trips and associated air quality effects; and
- Impacts to the visual character of the land in the bundle.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Crane Valley Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, potential for the development of incompatible land uses exists on the lands of the Crane Valley Bundle. Therefore, this potential for the development of incompatible land uses in the Crane Valley Bundle is considered a *significant* impact.

Bundle 17: Kerckhoff

The assumed development potential for the Kerckhoff Bundle is 93 EDUs on 200 acres in the following two Land Areas.

Kerckhoff Reservoir Land Area

The assumed development potential for the Bass Lake Land Area is 91 EDUs on 182 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sierra National Forest, and private lands in open space and recreation facilities.

Auberry Service Center Land Area

The assumed development potential for the Bass Lake Land Area is two EDUs on 18 acres. Existing adjacent land uses predominantly consist of the rural community of Auberry.

As described above, most of the land surrounding the Kerckhoff Land Area in the Crane Valley Bundle is forestland in the Sierra National Forest. The stated goals of the Sierra National Forest Plan are to provide recreation and hydroelectric generation, preserve visual resources, protect wilderness areas fisheries, wildlife and other natural and cultural resources. The potential exists for land uses developed on Project Lands to be incompatible with adjacent land uses. Key significant impacts of land development on Project Lands in the Kerckhoff Bundle could include:

- Impacts to sensitive habitats and species of birds, plants, and mammals;
- Impacts to unknown cultural resources;
- Impacts to the provision of local fire protection, police protection, public schools, and public parks;
- Impacts of increased vehicular trips; and
- Impacts to the visual character of the land in the bundle.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Kerckhoff Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

The Auberry Service Center is located in the rural Fresno County community of Auberry and is currently surrounded by land designated in the Fresno County General Plan for densities consistent with the assumed development potential of the 18-acre Auberry Service Center Land Area. As such, it is unlikely that any development in this Land Area would be incompatible with adjacent or nearby land uses.

As described above, potential for the development of incompatible land uses exists on the lands of the Kerckhoff Bundle, especially in the Kerckhoff Land Area. Therefore, this potential for the development of incompatible land uses in the Kerckhoff Bundle is considered a *significant* impact..

Bundle 18: Kings River

The assumed development potential for the Kings River Bundle is 153 EDUs on 871 acres in the following two Land Areas.

Wishon Reservoir Land Area

The assumed development potential for the Wishon Reservoir Land Area is 150 EDUs on 750 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sequoia National Forest, and private lands in open space and recreation facilities on the reservoir.

Keller Ranch Land Area

The assumed development potential for the Keller Ranch Land Area is three EDUs on 121 acres. Existing adjacent land uses predominantly consist of wilderness forestland in Sequoia National Forest which supports recreational use of the Kings River.

Assumed development at the Wishon Reservoir could be incompatible with existing open space and recreational uses of the Sequoia National Forest in the vicinity. The Sequoia National Forest Plan includes goals that seek to improve water quality, protect natural habitats, and improve recreational experiences. Only a limited amount of development is assumed on the Keller Ranch Land Area. The site is currently used as a staging area for two commercial whitewater rafting companies during the spring rafting season. There is a possibility that the land could be developed as a seasonal commercial or private recreation/resort facility, because of the proximity of whitewater rafting activities on the main stem of the Kern River. Depending on the nature of the development, this use could be compatible with long-term goals of the Sequoia National Forest to promote recreational uses.

It should be noted that the Wishon Wildlife Habitat Management Area, located about two miles west of Wishon Reservoir, is completely surrounded by Sierra National Forestland. The site is adjacent to 13 Pacific Gas and Electric Company cabins, some of which house Pacific Gas and Electric Company employees. Pacific Gas and Electric Company and the Forest Service agreed to the wildlife habitat management area as mitigation when the original FERC license for the Haas-Kings Project was obtained.

It is anticipated that the Wildlife Habitat Management Area could continue to serve its intended purpose after the Hydroelectric Divestiture Project. The remaining land would not be large enough to support development of a new residential community. It is likely that the residents in the cabin units may change with new ownership. Because the uses in this area are not anticipated to change, no land use impacts would be attributable to the proposed project.

Much of the land adjacent to and in the vicinity of the Kings River Bundle is managed for public trust values by the National Forest Service in Sequoia National Forests. In addition, there are various other key open space values that are managed in the Wishon Wildlife Habitat Management Area. Key significant impacts of land development on Project Lands in the King's River Bundle could include:

- Impacts to sensitive habitats and species of plants;

- Impacts related to the potential loss of access to the Keller Ranch for whitewater rafting support activities;
- Impacts to unknown cultural resources;
- Impacts to the provision of local fire protection, police protection, public schools, and public parks;
- Impacts of increased vehicular trips; and
- Impacts to the visual character of the land in the bundle.

Other significant impacts are described in Table 4.1-280 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Kings River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As described above, there exists in the Kings River Bundle the potential for the development of land uses that could be incompatible with adjacent uses of lands managed for public trust purposes. Therefore, this potential for the development of incompatible land uses in the Kings River Bundle is considered a *significant* impact.

Bundle 19: Tule River

The assumed development potential for the Tule River Bundle is 45 EDU on 45 acres of land in the Tule River Land Area. Existing land uses adjacent to the Tule River Bundle consist mainly of the Sequoia National Forestland on three sides and the Doyle Springs residential development on its northern side. The Doyle Springs Homeowners Association has offered to buy the property and maintain it in perpetuity as open space. In addition, representatives of the Sequoia National Forest have stated that the USFS would be potentially interested in purchasing the site in order to ensure that it remain in open space.

Assumed development in the Tule River Bundle could be incompatible with the small nearby residential community of Doyle Springs and adjacent Sequoia National Forest land due to incremental impacts of land development. Key significant impacts of land development on project lands in the Tule River Bundle could include:

- Impacts to sensitive habitats and species of plants;
- Impacts to unknown cultural resources;
- Impacts to the provision of local public schools and public parks; and
- Impacts to the visual character of the land in the bundle.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Tule River Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

Further, since the Sequoia National Forest has indicated that the present undeveloped character of the site is important as a continuation of the surrounding open space, development on lands in the Tule River Bundle could be incompatible with adjacent land uses. Therefore, this potential for the development of incompatible land uses in the Tule River Bundle is considered a *significant* impact.

Bundle 20: Kern Canyon

The assumed development potential for the Kern Canyon Bundle is 30 EDU on 664 acres of land in the Kern Canyon Land Area. Existing land uses adjacent to the Kern Canyon Bundle consist mainly of the Sequoia National Forest land on north and east, and undeveloped private lands on the south and west.

Assumed development in the Kern Canyon Bundle could be incompatible with the stated goals of the Sequoia National Forest Plan due to the incremental impacts of land development. Key significant impacts of this land development on project Lands in the Kern Canyon Bundle could include:

- Impacts to sensitive species of plants;
- Impacts to unknown cultural resources; and
- Impacts to the provision of local public schools and public.

Other significant impacts are described in Table 4.1-28 and less-than-significant impacts of land development are described in other sections of Chapter 4. While these effects, in some cases, are considered less-than-significant, the aggregate effect of land development in the Kern Canyon Bundle could fundamentally change the use of the land. In light of this change in use and the associated physical environmental effects, these new uses could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values.

As is described above, development on lands in the Kern Canyon Bundle could be incompatible with adjacent land uses. Therefore, this potential for the development of incompatible land uses in the Kern Canyon Bundle is considered a *significant* impact.

Summary of Impact 1-1: Entire Kings Crane-Helms Regional Bundle

The assumed development potential in the Kings Crane-Helms Regional Bundle includes 701 EDUs on 2,784 acres. Existing adjacent lands are in uses such as residences, recreational uses, and forestlands, including National Forest and other public lands. In many areas, these adjacent lands are managed by public agencies for public trust values including wilderness recreation, habitat protection, and the like. As a result, development on Project Lands in the Crane Valley, Kerckhoff, Kings River, Tule River, and Kern Canyon Bundles could be incompatible with the uses on adjacent lands. Therefore, this potential for the development of incompatible land uses in the Kings Crane-Helms Regional Bundle is considered a *significant* impact.

4.1.8.6 Evaluation of Impact 1-1 to Entire System

The assumed development potential in the entire Pacific Gas and Electric Company hydroelectric system includes 10,226 EDUs on approximately 94,716 acres of land. Existing adjacent lands are in uses such as residences, recreational uses, and forestlands, including National Forest and other public lands. In many areas, these adjacent lands are managed by public agencies for public trust values including wilderness recreation, habitat protection, and the like.

As is described in detail above, and throughout Chapter 4 of this Draft EIR, assumed development on Project Lands could have myriad environmental effects. Key significant impacts of this land development could include:

- Impacts to sensitive habitats and species of invertebrates, amphibians, reptiles, birds, plants and mammals (see Section 4.5.7);
- Impacts related to the potential loss of access to water-based and land-based recreational opportunities and facilities (see Section 4.6.7);
- Impacts to known and unknown cultural resources (see Section 4.7.7);
- Impacts to the provision of local public services, including fire protection, police protection, public schools, and public parks (see Section 4.11.7);
- Impacts related to exposure of public or workers to contaminated soil and or groundwater (see Section 4.9.7);
- Impacts related to fault rupture, groundshaking active faults, increased soil erosion or mass wasting, and soil instability (see Section 4.16.9);
- Impacts of increased vehicular trips (see section 4.12.8) and associated air quality impacts (see Section 4.14.9); and
- Impacts to the visual character of the land in the bundle (see section 4.15.7).

These significant impacts are described in Table 4.1-28 and other less-than-significant impacts of land development are described in sections of Chapter 4. In light of the land use changes described above and the associated physical environmental effects, the new uses that could be developed on Project Lands could be incompatible with uses on adjacent lands that are owned by public agencies and managed to further public trust values. As a result, development on Project Lands in the Shasta, DeSabra, Drum, Motherlode and Kings Crane-Helms Regional Bundles could be incompatible with the uses on adjacent lands. Therefore, this potential for the development of incompatible land uses in the entire Pacific Gas and Electric Company hydroelectric system is considered a *significant* impact.

4.1.8.7 Impact 1-1: Mitigation Measures

Mitigation Measure 1-1: Prior to or concurrent with the transfer of title for Local Bundles 1, 2, 4 through 8, 10 through 14, and 16 through 20, there shall be recorded against the Project Lands

within the bundle conservation easements running with the land and (in a form and substance approved by the CPUC) precluding any further land use development on all or a portion of the parcels, as necessary to prevent the placement of new development where it could be incompatible with existing adjacent land uses.

4.1.8.8 Impact 1-1: Level of Significance After Mitigation

Implementation of Mitigation Measures 1-1 would eliminate the impact altogether.

4.1.9 REFERENCES

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