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1. INTRODUCTION

1.1 Study Area and Background

The Western Area Power Administration (Western) markets and delivers reliable, cost-based hydroelectric power and related services within a 15-state region of the central and western United States. Within its Sierra Nevada Region, Western owns, operates, and maintains 115-kilovolt (kV), 230-kV, and 500-kV transmission lines in Alameda, Butte, Colusa, Contra Costa, Glenn, Lassen, Modoc, Sacramento, San Joaquin, Shasta, Siskiyou, Solano, Sutter, Tehama, Trinity, Yolo and Yuba Counties, California, and Klamath County, Oregon (see Figure 1-1). These lines include portions of the Central Valley Project (CVP) and the entire Pacific Alternating Current Intertie (PACI) transmission lines. Additionally, Western operates and maintains (also has partial ownership of) the California-Oregon Transmission Project (COTP), which is owned by the Transmission Agency of Northern California (TANC) and comprises three 500-kV lines that occupy one continuous right-of-way (ROW) extending from the Captain Jack Substation in Klamath County, Oregon, to the Tesla Substation in San Joaquin County, California. Besides transmission lines, TANC owns numerous communication facilities throughout Northern California that support COTP operations. Collectively, the CVP, PACI, COTP, seven communication facilities, and associated access roads are referred to as Western's North Area Right-of-Way (ROW), and comprise the project area.

Separate O&M plans have been prepared for each federal land manager or owner whose lands are crossed by TANC transmission lines or supporting facilities, including the Bureau of Land Management (BLM), and U.S. Forest Service (USFS), as well as private lands. This particular O&M plan focuses on the requirements on USFS lands affected by TANC facilities. TANC (in cooperation with the USFS) contributed to the development of this plan.

Western has developed long-range maintenance and management strategies for the high voltage transmission lines and related facilities on USFS land in central and northern California, specifically within Shasta-Trinity, Lassen, and Modoc National Forests. Shasta-Trinity National Forest is the largest forest in California, with a diverse landscape ranging from 1,000 feet to 14,162 feet in elevation. The 2.1-million-acre forest encompasses five wilderness areas, hundreds of mountain lakes and 6,278 miles of stream and rivers. The 1.2-million-acre Lassen National Forest is situated at the intersection of the Sierra Nevada, Cascades, Modoc Plateau, and Great Basin. The Modoc National Forest is the most northeasterly of the national forest units in California, with a gross area of about 2 million acres. The highest peak in the Modoc National Forest is Eagle Peak at 9,722 feet; the Pit River drains a great deal of the watershed in this area. Figure 1-2 shows Western's existing North Area lines within the Shasta-Trinity, Lassen, and Modoc National Forests.

The management objectives of this O&M Plan are to:

- prevent operational hazards;
- provide access for maintenance;

- protect facilities from fire;
- control the spread of noxious weeds and protect environmental quality;
- adhere to principles of Western's Integrated Vegetation Management (IVM) Program;
- establish stable, low-growing plant communities under ROWs;
- develop a technically and economically efficient program; and
- protect public and worker safety.

The purpose of this document is to describe the routine O&M activities proposed by Western associated with its operating agent contractual requirements for maintaining the TANC transmission lines, substations, communication system, microwave sites, and other ancillary facilities located on private lands. Western is responsible for ensuring that all of its contractors and its employees are aware of the contents of this plan.

1.2 U.S. Forest Service Mission and Policies

Western has coordinated extensively with the USFS in developing this specific O&M Plan for USFS land. This O&M plan was developed in a manner to ensure consistency with the USFS mission and goals as described below.

"The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations."

The USFS goals are to:

- **Reduce the risk from catastrophic wildland fire.** Restore the health of the Nation's forests and grasslands to increase resilience to the effects of wildland fire.
- **Reduce the impacts from invasive species.** Restore the health of the Nation's forests and grasslands to be resilient to the effects of invasive insects, pathogens, plants, and pests.
- **Provide outdoor recreational opportunities.** Provide high-quality outdoor recreational opportunities on forests and grasslands, while sustaining natural resources, to meet the Nation's recreational demands.
- **Help meet energy resource needs.** Contribute to meeting the Nation's need for energy.
- **Improve watershed condition.** Increase the number of forest and grassland watersheds that are in fully functional hydrologic condition.
- **Conduct mission-related work in addition to that which supports the agency goals.** Conduct research and other mission-related work to fulfill statutory stewardship and assistance requirements.

1.3 Western's Reliability and Safety Responsibilities

This O&M plan focuses on maintaining all TANC-owned facilities in the COTP ROW, thereby ensuring reliability of the transmission system and safe, all-weather access to the transmission line structures and ancillary facilities. These objectives are consistent with reliability, safety, and environmental regulations and policies, including the National Electric Safety Code, the Western Systems Coordinating Council requirements, North American Electric Reliability Council (NERC) Reliability Standards (Standard FAC-003-1 – Transmission Vegetation Management Program), and the Western directives for protecting human safety and maintaining system reliability. A detailed white paper listing Western's clearance requirements is provided in Appendix A.

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Figure 1-1 Project Overview
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Figure 1-2 USFS Lands Crossed by Western's North Area Line
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2. COORDINATION AND COMMUNICATION

2.1 Principal Representatives

Clear, efficient, and timely communication and coordination between the USFS, TANC, and Western is necessary for the implementation and monitoring of this O&M plan on USFS lands. To ensure this, USFS, TANC, and Western will each designate representatives assigned to all Western O&M activities within the USFS boundary. Western, TANC, and USFS commit to timely communication, with prompt e-mail and phone responses. Contact information for all representatives is provided below in Tables 2-1 and 2-2. Contact information will be updated annually by Western, in coordination with TANC and the USFS.

Table 2-1 USFS Contact Information

Name	Title	Phone Number	E-mail
Vacant	Public Uses Staff Officer	(530) 226-9525	To be determined
Stacy Smith	Special Use Officer	(530) 926-9643	slsmith01@fs.fed.us

Table 2-2 TANC and Western Contact Information

Name	Title	Phone Number	E-mail
Steve Tuggle	Western Environmental Resource Manager	Office (916) 353-4549 Cell (916) 804-9721	tuggle@wapa.gov
Don Wagenet	TANC Environmental and Lands Manager	Office (916) 852-1673 Cell (916) 798-3899	dwagenet@tanc.us
Ami Goerdt	Western Biologist	Office (916) 353-4526 Cell (916) 847-3608	goerdt@wapa.gov
Cherie Johnston Waldear	Western Archaeologist	(916) 353-4035	waldear@wapa.gov
Heidi Miller	Western Realty Specialist	(916) 353-4420	hmiller@wapa.gov

2.2 Noncompliance

The USFS will immediately notify Western's principal representative should the O&M plan not be adhered to. If the matter has not been resolved after informal discussions, the USFS will notify TANC, and follow the regulatory procedures (applicable under the provisions of 36 CFR 251.60).

2.3 Plan Amendments and Changes

If modifications and/or changes to this O&M plan are needed, they may be initiated at the request of Western, TANC, or the USFS. Modifications and/or changes will be coordinated among Western, TANC, and the USFS, and joint approval in writing will be required by the USFS supervisor, TANC, and Western project management before such modifications and/or changes become effective.

2.4 Tracking and Identification

All activities and sites will be tracked by tower numbers in Western's geographic information systems (GIS), by township, range, and section numbers, or by specific site name, such as communication sites. These tracking units may be supplemented with 1:24,000 scale topographic maps and/or photos that identify tower numbers and the road system. See section 7 for more details on Western's GIS system.

3. OPERATION AND MAINTENANCE ACTIVITIES

Western's operation and maintenance (O&M) program has been developed to improve the safety and reliability of the electric transmission systems, including the existing North Area transmission lines. The project includes the Pacific AC Intertie (PACI), Central Valley Project (CVP), and California-Oregon Transmission Project (COTP) rights-of-ways (ROWs) as well as the TANC-owned/Western-maintained communication facilities. The program focuses on preventing transmission outages associated with vegetation interference (grow-in and fall-in) by maintaining clearances between the existing transmission lines and vegetation within and adjacent to the ROWs. In addition, maintaining safe and reliable access to the ROW is paramount to long-term sustainability of the North Area transmission lines, which must meet the North American Electric Reliability Council (NERC) directives, the Institute of Electrical and Electronics Engineers Inc. (IEEE) clearance guidelines, and Western's Order 430.1.

In general, Western will employ vegetation management practices that will promote low-growing native plant communities[1] within the ROW. The methods selected for vegetation management will depend on the sensitivity of the resources in the area, the existing vegetation conditions, the surrounding topography, and the measures coordinated with federal and state resource agencies and land managers.

Western has coordinated with the Forest Service (USFS) and TANC on this project and has designed its O&M program to meet USFS plans and policies as well as Western's contractual safety and reliability requirements. Within USFS lands, Western acknowledges USFS's concerns related to maintenance of access roads and the associated issues of potential soil erosion and slope instability. This section specifically outlines the Western/USFS coordinated O&M activities to be conducted on USFS lands.

3.1 Inspection/System Management

In compliance with Western's *Guidelines, Requirements, Inspections*, *and Procedures* (GRIP) 19, Western has been conducting aerial, ground, and climbing inspections of its existing transmission infrastructure since initial construction. Western has updated these required inspections under this O&M program. The following paragraphs describe Western's inspection requirements.

3.1.1 Aerial Inspections

Aerial inspections will be conducted a minimum of every three months by helicopter or small plane over the entire transmission system to check for hazard trees[2] or encroaching vegetation, as well as to locate damaged or malfunctioning transmission equipment. Typically, aerial patrols will be flown between 50 and 300 feet above Western's

[1] Low-growing native plant communities consist of native grasses, shrubs, forbs, and herbaceous species.

[2] Trees located within or adjacent to the easement or permit area that present an immediate hazard to the facility or have the potential to encroach within the safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor.

transmission infrastructure depending on the land use, topography, and infrastructure requirements. In general, the aerial inspections will pass over each segment of the transmission line within a one-minute period.

3.1.2 Ground Inspections

Annual ground inspections will be used to inspect access to the towers/poles, tree clearances, fences, gates, locks, and tower hardware, and ensure that each structure would be readily accessible. They allow for the inspection of hardware that will not be possible by air, and help identify redundant or overgrown access roads that should be considered jointly for permanent closure. Ground inspections are typically conducted by driving a pickup truck along the ROW and access roads. Detailed ground inspections will be performed on 20 percent of all lines and structures annually, for 100 percent inspection every 5 years. Inspections will include a shake test, which involves manually shaking the knee braces of the tower to see if there is anything loose on the structure.

3.1.3 Climbing Inspections

Climbing inspections will be performed on all antenna towers at least once every 7 years to identify deterioration in hardware that could not be detected from either ground or aerial patrols. In addition, climbing of transmission line structures will occur if problems were identified during ground inspections. Typically, such activities will involve the use of a pickup truck or bucket truck.

3.2 Maintenance Activities

In general, Western O&M activities for the TANC transmission lines will include the following:

- **Vegetation maintenance (transmission line and access road ROWs).** Vegetation maintenance ensures that vegetation does not interfere with human safety, transmission line conductors, towers, or other hardware, or impede access to the transmission line for maintenance crews. In general, vegetation maintenance can be performed using a variety of methods including manual methods (hand-controlled, powered or non-powered tools such as chainsaws and clippers), mechanical methods (such as heavy-duty mowers), and herbicidal applications (used either to prohibit or retard vegetative growth). As described in Appendix B, past herbicide application in the North Area ROW involved very low quantities of herbicide primarily for stump treatment. Herbicide application under the proposed O&M program would likewise be minimal.

- **Access road maintenance.** Access road maintenance includes activities to ensure that legal access roads are in appropriate condition for all-weather access to transmission lines by maintenance and inspection crews. These activities include grading, surfacing, erosion-control measures, and constructing water diversions such as culverts, ditches, and water bars.

- **Transmission line and associated structure, hardware, and equipment maintenance.** This category of activities includes equipment and system upgrades, routine aerial and ground patrols of transmission lines and ROWs, and transmission system repairs.

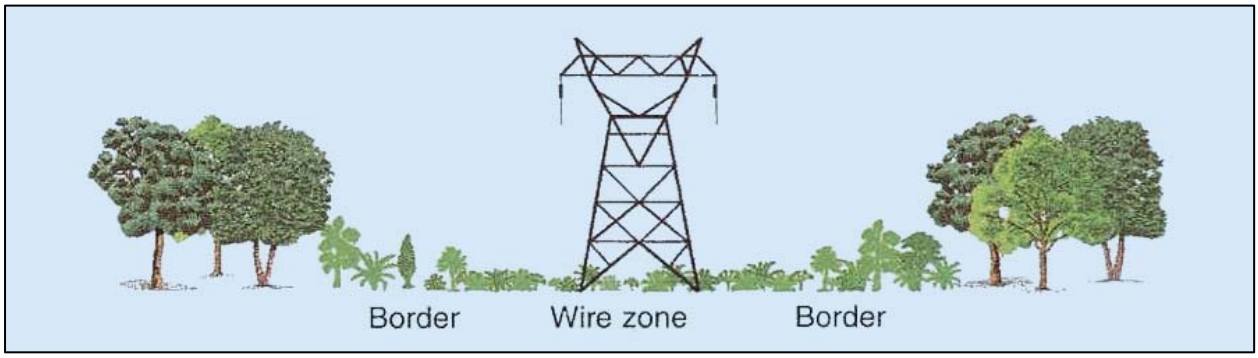
The methods used to complete maintenance activities will be selected in consultation with the USFS.

3.2.1 Vegetation Maintenance

Western's proposed Integrated Vegetation Management (IVM) program identifies the appropriate vegetation maintenance approach (also referred to as prescription) for specific areas based on the sensitivity of resources, reliability and safety issues, and environmental laws and regulations. IVM is a practice of managing undesirable vegetation in which action clearance thresholds are established and proactively monitored. For those areas where monitoring indicates the violation of one or more thresholds, all possible control options are evaluated, selected, and implemented. Control options ultimately selected are based on worker and public safety, environmental impact, effectiveness, site characteristics, and economics. Initially, the ROW is restored through the removal of undesirable vegetation. The ROW is then enhanced via various management techniques to protect facilities and their accessibility for maintenance, reduce the potential for fire, and provide habitat for wildlife and a variety of plant species. Under the IVM program, vegetation maintenance options range from wire zone/border zone management (with the greatest vegetation clearance) to buffered vegetation management (with the least vegetation clearance).

Establishment of a wire zone/border zone is a key consideration in the development of IVM programs. For most areas, Western will adopt a wire zone/border zone approach to ROW vegetation management, which recognizes the ROW as a valuable economic and ecological resource. Key to this concept is the management of the ROW from two perspectives, the wire zone and the border zone. The wire zone includes the ROW area immediately under the transmission wire plus 10 feet on both sides of the outer-most wires. The border zone is the remainder of the ROW on both sides of the wire zone. The goal is to have a low shrub-forb-grass cover type in the wire zone and a taller shrub-forb-grass cover type in the border zone. Brush and/or tree vegetation should be thinned to a maximum average distance of 30 feet between main stems. Also, this approach will maintain 30 feet of clearance around each transmission tower or transmission structure. Benefits of this approach include a reduction in the frequency of disturbance due to less frequent vegetation management activities. Figure 3-1 is an illustration of the desired appearance of a ROW subject to a wire zone/border zone management practice.

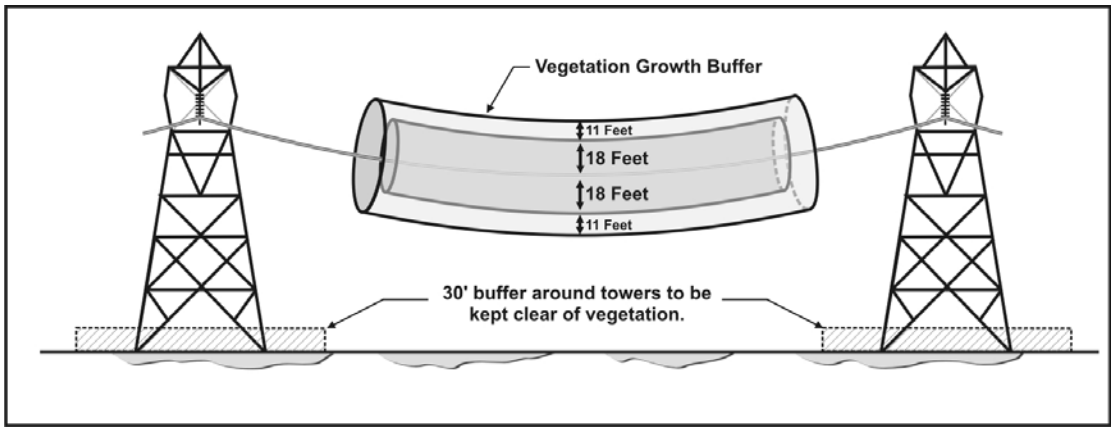
Figure 3-1 Wire Zone/Border Zone Management Practice



In specific areas where conversion of the ROW from naturally occurring tree-dominated native plant communities into a wire zone/border zone ROW is not appropriate, Western has developed a buffered vegetation management approach that aligns USFS goals with Western's need to maintain NERC reliability standards (currently 18 feet of clearance from any vegetation). Under the buffered vegetation management approach, Western will maintain of the required clearance between vegetation and any point of the circuit or transmission system. As with the wire zone/border zone vegetation management approach, this approach will maintain 30 feet of clearance around each transmission tower or transmission structure. Benefits of this approach include the reduction of ground-disturbing activities and the related reduction in the establishment of nonnative plant species. Figure 3-2 provides an illustration of the buffered vegetation management approach proposed for USFS lands, as necessary.

A transmission circuit can move vertically depending on the atmospheric temperature and electrical load on the line. Western and USFS recommend adding 60 percent to the clearance standard as a buffer to account for the sag in the line during high temperatures and high load periods. As a result, the buffered vegetation management area will include the mandatory 18 feet Clearance I requirements plus 60 percent of buffer clearance (approximately 11 feet based on the current 18-foot requirement) for vegetation growth and sag in the line (refer to Figure 3-2).

Figure 3-2 Buffered Vegetation Management Approach for 500-kV Line



Note: A minimum 23-foot buffer (for clearance and vegetation growth) from conductor to vegetation would be required for a 230-kV buffered vegetation management area

As described above, Western proposes to implement a combination of vegetation management practices that are consistent with the principles of IVM and in concert with USFS goals and policies. Depending on the area and the requirements, Western will develop specific prescriptions to manage vegetation along the ROWs (e.g., fuel shade break). The prescriptions will fall between the wire zone/border zone and buffered vegetation management. (See Table 3-1 for example). The following paragraphs describe the general vegetation management methodologies identified for USFS land

Table 3-1 Sample IVM Prescription

Shaded Fuel Break Prescription
Vegetation within a 29-foot (or most recent requirement plus 60%) buffer of the conductor or that can encroach within will be manually removed.
Elderberry, redbud, fruit trees, and other low-lying vegetation (typically under 12 feet at maturity) will not be removed. Western will consult with USFS for further detail of desirable vegetation to be left within the ROW (does not apply around tower footprint). Remaining brush (other than desirables) will be manually thinned to an average of 20 to 30 feet of spacing per single shrub or tree, and toyon will be favored for keeping over manzanita, and oaks over knobcone pines.
30 feet of vegetation-free clearance will be maintained around each transmission tower or transmission structure.
Directional pruning, whereby trees are pruned to direct growth away from the conductors, will be used in special situations where it is desirable to leave trees in place as visual screens (e.g., along roads, streams, and rivers) or where easement contracts and land/resource plans dictate such tree removal or trimming criteria (e.g., in orchards and along streams).
Western acknowledges federal land management concerns related to the fuels left in the ROW and will promote the reduction of fuel load during vegetation management activities. All vegetation will be chipped (to not exceed 4 inches) and broadcast back into the ROW unless otherwise authorized by the USFS. Where access is limited, lopping and scattering (that would not exceed 12 inches from ground) must be authorized by the USFS and Western prior to work.
When trimming is appropriate, all conifers will be trimmed back to the bole of the targeted tree.
Large-diameter trees will be limbed (branches less than 4 inches) and scattered so that the depth of the slash or tree boles does not exceed 18 inches in height.
Mechanical methods will be constrained where soils are susceptible to compaction or erosion.
Rubber-tired tractors will be prohibited on slopes exceeding 40 percent and on soils where there is a high potential for compaction and erosion (except on access roads). Slopes greater than 40 percent will be avoided by all mechanical equipment. The only exceptions will be on existing access roads and in designated areas where adverse impacts can be avoided.
Legal access roads will be brushed to 16-foot width. Western will refer to the map and USFS for questions and identification of access roads.

3.2.1.1 Manual Vegetation Control Methods

Manual vegetation control is defined as the application of powered and non-powered handheld tools or installation of synthetic or natural barriers to manage vegetative growth. The primary benefit of manual methods is selectivity; only unwanted vegetation is removed. The primary disadvantages of manual methods are that they are labor intensive and are most effective in relatively low-density vegetation. The manual vegetation control techniques employed by Western are described below.

CUTTING

The most commonly used manual method to control vegetation is cutting target plants with power saws. Other manually operated tools such as axes, machetes, and clippers may also be used. This method is highly effective on species that do not resprout. For species that resprout, including most deciduous trees, sprouts may resurge to original heights within several years and at much greater density than the original stems (BPA 1983). Access for subsequent manual treatments is thereby hindered.

GIRDLING

Girdling involves manually cutting away bark and cambium tissues around the trunk of target trees. This treatment is rarely practiced by Western, but may be appropriate in some cases (e.g., where large trees cannot be felled by cutting) if agreed to by USFS. Conifer species are killed by girdling, but hardwoods frequently will resprout below the girdle unless the cut is treated with herbicide. Girdling results in standing dead trees or snags, which are left to decompose and fall on their own. Snags are left at the land owner's request and may provide habitat for cavity-nesting species and other wildlife (Western 2007). Girdling could pose a fuels management problem by mixing standing dead fuel with live fuel, which can significantly increase the potential for a crown fire.

TOPPING AND TRIMMING

Topping involves cutting a tree at a specific height to prevent it from growing into transmission lines or microwave beam paths without felling the whole tree. Conifers will not be topped, although this treatment may be used on other species in rare cases as the situation dictates.

Trimming or pruning is the removal of selected branches from tree trunks for the same purposes, along with aesthetic preservation. Directional pruning is practiced by Western to the extent possible, whereby the trees are pruned to direct growth away from the conductors.

Western uses these highly labor-intensive techniques in special situations where it is desirable to leave trees in place as visual screens (e.g., along roads, streams, and rivers) or where easement contracts and land/resource plans dictate such tree removal or trimming criteria (e.g., in orchards and along streams) (Western 2007). Under the buffered vegetation management approach, limbing or trimming of the individual branches that encroach into the buffered vegetation area is the preferred method. For this approach, topping is not acceptable because it may encourage faster growth toward the transmission lines. In addition, when there is no compelling need to remove an entire tree, that tree should not be cut down.

SLASH DISPOSAL/FUELS REDUCTION

Manual cutting operations by Western are sometimes followed by slash disposal techniques designed to reduce fire hazards or to improve esthetic appeal. Slash refers to the debris left within the vegetation treatment area. The slash will be treated as follows:

- **Chipper-accessible areas (sites located within 150 feet of truck/chipper-passable roads):** Foliage and limbs less than 6 inches diameter will be chipped into truck box, removed from site, and disposed of at an approved location. Limbs and logs greater than 6 inches diameter will remain on site whole, unless alternate treatment is specified in the Tree Work Authorization Form.

- **Non-chipper-accessible areas (sites located farther than 150 feet of truck/chipper passable roads):** Foliage and limbs less than 6 inches diameter will be lopped and scattered outside of cleared ROW to a depth no greater than 18 inches. Limbs and logs greater than 6 inches diameter will remain on site whole, unless alternate treatment is specified in the Tree Work Authorization Form.

- **High-visibility or high-recreational-use areas only:** Foliage and limbs less than 6 inches diameter will be treated as described above according to truck/chipper access. Limbs and logs greater than 6 inches diameter will be cut into manageable lengths and stacked in piles (not to exceed 4 feet cubed) to encourage public consumption, unless alternate treatment is specified in the Tree Work Authorization Form.

3.2.1.2 Mechanical Vegetation Control Methods

Mechanical methods employ machines to remove or control vegetation. These methods are often nonselective in that certain plants cannot be targeted for removal or avoided. Mechanical methods, however, may be highly effective at controlling brush on gentle topography with few site obstacles. Most mechanical equipment is not safe to operate on slopes over 30 to 35 percent. Mechanical methods are also constrained where soils are susceptible to compaction or erosion. Site obstacles such as rocks, stumps, or logs also reduce efficiency of these methods (Western 2007).

3.2.1.3 Herbicide Control Methods

Under the Proposed Action, Western may expand its use of herbicides for vegetation management. Western will coordinate with each land-management and/or local agency to ensure that its use of herbicides is consistent with local herbicide-use regulations or guidelines (e.g., Nation Risk Assessment process).

An herbicide is a chemical used to kill or suppress the growth of plants. The most satisfactory classification of herbicides is based upon how they are used for weed control and how they work. Accordingly, herbicides are classified into two major types:

- **Selective herbicides** kill certain plants but do not significantly affect the most desirable plants. For example, some selective herbicides kill broadleaf plants (including brush) but do not affect grasses.

- **Nonselective herbicides** are chemicals that are generally toxic to plants without regard to species. Plants differ in susceptibility to any specific chemical and the choice of herbicide and application rate depends on the species to be controlled.

Western proposes using only those herbicides that have been approved for use in ROW maintenance based on evaluations of toxicity, solubility, soil adsorption potential, and persistence in water and soil. Further, these herbicides must be registered for use in California by the U.S. Environmental Protection Agency. Appendix B provides detailed information on these herbicides, including BLM and USFS requirements. Western will use only employees or contractors with required applicator licenses/certificates.

Western will follow strict chemical label instructions, safety procedures, and best management practices (BMPs) while applying herbicides. These practices, described in Western's Integrated Vegetation Management Guide and Transmission Vegetation Management Program (IVM) (Western 2007), are a part of the O&M program and will include the following provisions:

- Reviewing federal and California pesticide regulations for restrictions on use of particular herbicides will be reviewed;
- Reviewing land owner/interagency agreements for herbicide type or application method restrictions will be reviewed;
- Using only herbicides approved by the individual agencies based on herbicide-use proposals that will be submitted by Western annually. These annual plans, to be submitted from Western to the USFS and TANC, will comply fully with Condition 11 of the July 6, 1994 Right of Way Grant from USFS to TANC;
- Western will use only those herbicides approved by Forest Service Region 5 on nonnative and invasive plant species on USFS lands;
- Site conditions will be matched to specific herbicides and application methods, including the plants that are to be controlled, seasonal limitations, presence of sensitive environmental areas (such as endangered species, habitat, and wetlands), presence/proximity of non-target vegetation, and vegetation conditions (such as height and amount of tall-growing brush);
- Western's environmental protection requirements will be reviewed and implemented;
- Restrictions and guidance listed on the herbicide label will be followed;
- Equipment will be calibrated to ensure proper mixture and volume of herbicide;
- The proper nozzle tip will be selected to avoid overspray;
- Herbicides will be handled to avoid accidental spills and ensure worker and public safety;
- Herbicide application methods will be adjusted based on wind speed and direction, which may include avoiding application on windy days when drift potential is greatest;

- If requested, Western will provide the land owner and/or appropriate agency with the following information after completion of a maintenance activity: herbicide used, amount (including concentration), location of application, and method and date of application.

There are several different ways to apply herbicides, and the method selected depends on the type of control needed, the type of vegetation, and the site situation (i.e., site conditions, location). Application methods include stump treatment, basal spray treatment, foliage spray treatment, soils treatment, and under-surfacing materials treatment.

STUMP TREATMENT

Stump treatment is used when vegetation is cut to the ground line. This method is primarily used: 1) after initial clearing and 2) during maintenance clearing when trees have grown too tall to use foliage spray or when drift is an issue (Western 2007). Western currently applies either an oil-based herbicide mixture or a ready-to-use non-oil solution.

BASAL SPRAY TREATMENT

This treatment method involves spraying the lower part of the stem and the exposed roots of incompatible vegetation with an oil-based formula. Basal spray treatment will be used on resprouting species and identified nonnative and invasive plant species. This method is more selective than a foliage spray and does not cause immediate brownout of vegetation (Western 2007). In general, this treatment is prescribed where:

- brush is too tall to use foliage spray without causing unacceptable drift;
- the ROW is adjacent to cropland, residences, susceptible vegetation, or other sensitive areas, and drift is a problem;
- the ROW contains a high density of compatible species, and a foliage spray cannot be applied without injuring the compatible cover.

FOLIAR SPRAY TREATMENT

Foliar spraying is a common method of applying herbicides on brush up to 15 feet tall. This method uses a water-based formulation that is applied to the entire plant's foliage and stems. Because it is sprayed into the air, drift can be a problem under certain atmospheric conditions. Also, most foliage sprays cause immediate brownout of vegetation. This method will not be used in areas where drift and brownout are concerns (e.g., adjacent to cropland, residences, susceptible vegetation, or other environmentally or visually sensitive areas) (Western 2007).

3.2.2 Access Road Maintenance

Western acknowledges that issues related to maintenance of access roads are of primary concern to TANC and USFS. As part of the O&M program, Western must maintain safe and reliable access roads to the existing infrastructure. Western will comply with applicable land-owner specifications, and will notify TANC and USFS of

major maintenance activities. The following paragraphs describe Western's approach to maintaining existing legal access roads.

For all access road work, any equipment will be cleaned and inspected prior to operations. All ditches, existing culverts, and inlet assemblies will be cleaned. Slash and debris may be scattered, but will not be placed near or in stream channels, culvert inlets, or ditches. There will be a clearing limit of 4 feet on both sides of the existing roadbed. Trees over 6 inches in diameter within the clearing limit that do not impede blading will be limbed to a height of 14 feet and left standing.

The following paragraphs describe in additional detail Western's approach to maintaining its existing legal access roads.

3.2.2.1 Clearing Culverts and Ditches

Existing culverts and ditches must be kept free of debris and obstructions. Ditches on newly constructed roads could require frequent cleaning and checking after each major storm until revegetation has occurred. It is a goal of Western to check each culvert at least once a year after spring rains and before winter rains; additional culvert checks will be performed as needed to keep culverts clean and unobstructed. During inspection and clearing of culverts and ditches, Western will:

- leave grass in the ditch unless it has filled with sediment and is no longer functioning;
- check for undercutting road shoulders and banks;
- check culverts for blockage by debris;
- not leave a berm on the side of the road; berms will channel water down the road.

3.2.2.2 Culvert and Ditch Specifications

CULVERTS

A culvert will be constructed of corrugated metal or corrugated steel. The area 10 feet upstream and downstream of a culvert and a width 2 feet wider than its diameter will be cleared.

Western understands the potential for adverse environmental effects if a culvert is installed without consideration of existing biological resources. As such, Western will consider the following guidelines when constructing new culverts:

- Whenever possible, low-water crossings will be installed instead of a culvert;
- Applicable permits (including national regulatory permits for wetlands and state water-quality certification and streambed alteration) will be obtained;

- Projects will be scheduled so that they do not coincide with fish migrations, spawning, and egg-incubation periods; and

- The appropriate erosion and sediment controls will be installed on disturbed soils as soon as possible, consistent with the terms and conditions of all applicable permits.

Culverts will be sized and installed to be large enough to pass a 100-year flood at 67 to 75 percent of capacity. They will be designed to accommodate water velocities and flows necessary for fish, frogs, and other aquatic species to swim through the culvert. Culvert diameters will match the width of the stream at an average point. Stream widths will be measured at the top of the banks as this may best represent the stream size during normal high water or bank-full conditions. The angle or slope of the culvert will be equal to the stream grade to maintain an acceptable water velocity for fish passage. For culvert design specifications, refer to drawings in Appendix E. The designs presented in Appendix E are example culvert design specifications that may be used in the field depending on the unique site characteristics, while maintaining the 100-year flood at 67 to 75 percent of capacity.

WATER BARS

A water bar is a ridge that directs water off the road. Water bars will be spaced 200 feet apart for roads with a grade under 6 percent, 125 feet apart for grades between 6 and 10 percent, and 50 feet apart for grades between 10 and 13 percent. For water bar design specifications, refer to drawings in Appendix E.

ROLLING DRAIN DIPS

A rolling drain dip likewise allows for cross-drainage. It consists of a shallow dip followed by a hump, along with an earth berm at the edge of one side of the road. For rolling drain dip design specifications, refer to drawings in Appendix E.

3.2.2.3 Removing Slide Debris

Slide debris can cause increased sediment loads in established roadway drainage systems as well as in established streams. In order to prevent this, Western will not sidecast removed material. Should slide debris occur, the cause will be evaluated to determine if removal of the slide debris could exacerbate slope instability by undercutting the toe of the slope. In some instances, removal of some debris could be required and stabilization of the remaining material could prevent further problems. The appropriate erosion and sediment controls will be installed on disturbed soils as soon as possible (i.e., before site work is finished). Mulching and other forms of erosion control will be used to prevent erosion.

3.2.2.4 Repairing Road Structures

In order to maintain safe access, associated road structures will be routinely inspected and maintained. Road structures in need of repair could include bridges, culverts, cattleguards, and fences. Should a structure need to be modified, maintenance activities

will be designed to reduce erosion and sedimentation in streams. Western will employ the following BMPs:

- Be consistent with the most current USFS structure design and specifications;
- Protect vegetation and minimize the amount of disturbance of plants and soils by equipment;
- Work quickly to minimize the time disturbed soils are exposed;
- Divert run-off away from exposed soils into vegetated buffers;
- Disperse concentrated stream flows;
- Provide adequate run-off channels;
- Trim slopes to stable configurations and revegetate as soon as possible;
- Comply with land-manager design and engineering requirements as well as erosion control and slope stability practices for new or modified structures;
- Inspect new or modified structures at least once a year after spring rains and before winter rains;
- If repairs are made under emergency situations, mitigate the damage created during emergency road repairs as soon as possible to prevent further damage and erosion.

3.2.2.5 Controlling Erosion

Western will work with guidance from TANC and USFS to review and annually prioritize roads for repair, over a 5 year period. This will involve monitoring for erosion, rehabilitating gullies and rills, and ensuring that there are no ruts of deeper than 3 inches.

3.2.2.6 Repairing Damaged Access Roads

For damaged access roads or roads with existing drainage and erosion problems, Western will replace the surface material lost or worn away, then grade and shape the road surface, turnouts, and shoulders to their original condition, or better. Watering could be required to control dust and to retain fine surface rock.

This program would make it a goal to eliminate old erosional features while proactively preventing new problems. While repairing damaged access roads, Western will adhere to the following BMPs:

- Be consistent with USFS structure design and specifications;
- Minimize the amount of disturbance of plants and soils by equipment;

- Work quickly to minimize the time disturbed soils are exposed;
- Divert run-off away from exposed soils and into vegetated areas;
- Disperse concentrated stream flows;
- Provide adequate run-off channels;
- Trim slopes to stable configurations and re-vegetate as soon as possible;
- Inspect road quality and structures at least once a year after spring rains and before winter rains; and
- If repairs are made under an emergency situation, mitigate any damage created as soon as possible to prevent further damage and erosion.

3.2.2.7 Removing Access Roads

Based on recommendations from Western, TANC may consider removing access roads that are no longer needed. Western will annually recommend roads for removal by providing TANC and the USFS authorized officer with a legal description of the road segments that can be abandoned for COTP O&M purposes. Upon TANC and USFS approval, Western, TANC, and the USFS will develop a plan to stabilize or restore the abandoned roads to a natural state over a 5- to 6-year period.

3.2.3 Transmission System Maintenance

The need for repairs and preventative maintenance activities is based on the results of inspections or other reports. Repairs and preventative maintenance activities include: replacing insulators; tightening, replacing, or repairing towers/poles or hardware; and looking for ROW encroachments. These activities will be performed wherever damage or deterioration of transmission lines or facilities poses a threat to safety or reliability. The type of equipment needed may include a pickup truck, bulldozer, backhoe, bucket truck, and hand tools, and will depend on the required repair or maintenance activity. For major activities, Western will coordinate in advance of conducting the activities with TANC and USFS.

3.3 Equipment/System Upgrades

In order for the transmission system to operate in a safe, reliable, and efficient manner, Western needs to replace or upgrade system components based on the age, condition, and technology of the piece of equipment. System upgrades or replacements will include: new conductors, capacitor banks, transformers and breakers, small solar power arrays, and other electrical equipment.

3.4 Emergency Response

Emergencies are any event requiring immediate response to a condition by Western personnel. These may include, but are not limited to, car-to-pole contacts, downed

poles, fires, transformer outages and or outages due to a downed wire as a result of an unexpected situation (e.g., extreme weather, fallen tree, etc.). Responding crews will vary in number and equipment needs depending on the size and severity of the emergency.

Western will assess the situation and then contact Western Dispatch Office and appropriate personnel at TANC and USFS. Western personnel will secure the site for worker and public safety. Western Dispatch Office will contact appropriate internal and external contacts to remediate, repair, or mitigate the situation. Crews may be required to respond to an emergency in a remote area without roads. In areas without vehicle access, helicopters may be used to respond quickly to emergencies.

3.5 Operation and Maintenance Activity Categories

The following is a list of the O&M activities according to the associated level of potential effect to sensitive resources. Note that substation and facility maintenance activities are restricted to the confines of the existing fenced substation or facility perimeter.

- Category A – Inspection and Minor Maintenance Activities
- Category B – Routine Maintenance Activities
- Category C – New Infrastructure

Western has developed project conservation measures (PCMs) designed to protect natural resources within the North Area ROWs and access roads. These PCMs were designed to reduce potential impacts and are based on the O&M categories named above and described below. PCMs include identification of limited operating periods, pre-activity flagging of resources, and equipment restrictions. Western will notify TANC and USFS of activities that require advance consultation.

Section 6 provides a list of PCMs that Western will follow. Sections 3.5.1 through 3.5.3 provide descriptions of each O&M category.

3.5.1 Category A – Inspection and Minor Maintenance Activities

Maintenance activities in Category A are primarily inspection-type actions, with some minor repairs that would cause minimal, if any, soil disturbance. These maintenance tasks will cause no or nominal effects to sensitive resources as long as standard operating procedures (SOPs) are followed (see Table 5-1). Typical activities under Category A include but are not limited to:

Substation Maintenance

- Maintenance and replacement of transformers and breakers
- Servicing and testing of equipment at existing substations, including oil change-outs
- Installation or replacement of bushings
- Cleaning or replacement of capacitor banks
- Maintenance or installation of propane tanks within a substation yard
- Maintenance of switches, voltage regulators, reactors, tap changes, reclosers, and valves
- Replacement of wiring in substations and switch yards
- Replacement of existing substation equipment including regulators, capacitors, switches, wave traps, radiators,and lightning arresters
- Installation of cut-out fuses
- Adjusting and cleaning disconnect switches
- Placement of temporary transformer
- Maintenance, installation and removal of solar power array and controller
- Installation of foundation for storage buildings above ground mat within existing substation yard
- New footings
- Ground mats repairs
- Remediation of small spill of oil and hazardous materials (less than 1 gallon)
- Clearing vegetation by hand within the property boundary of a fenced substation
- Application of soil sterilants and herbicides within the property boundary of fenced substation

Transmission Line Maintenance

- Ground and aerial patrols
- Ground wire maintenance
- Aircraft warning device maintenance
- Insulator maintenance
- Bird guard maintenance
- Cross arm maintenance on wood pole transmission line structures
- Emergency manual removal and/or pruning of danger trees or vegetation
- Steel members of steel transmission line structures
- Hardware on wood and steel transmission line structures
- X brace and knee brace maintenance
- Dampener maintenance
- Ground rod maintenance
- Armor rod maintenance and clipping-in structures
- Conductor upgrade/maintenance
- Emergency placement of rocks at bases of poles or structures to stabilize small eroded areas
- Remediation of small spill of oil and hazardous materials (less than 1 gallon)
- Antennae maintenance
- Structure mile marker maintenance

Communication System Maintenance

- Microwave radio tower maintenance
- Communication tower and antennae maintenance
- Light beacon maintenance
- Microwave dish maintenance
- Parabolic dish maintenance
- Periodic antenna tower climbing inspections

Facilities Maintenance

- Building maintenance including interior and exterior painting; and roof, ceiling, floor, window, and door maintenance
- Clearing vegetation by hand within the property boundary of fenced maintenance facilities
- Application of soil sterilants and herbicides within the property boundary of fenced maintenance facility

3.5.2 Category B – Routine Maintenance Activities

Maintenance activities in Category B include some of the typical repair tasks that occur along the COTP ROW. Category B actions have the potential to cause minimal effects to sensitive resources. Category B maintenance equipment could include, but is not limited to, rubber-tired vehicles such as bucket trucks, backhoes, front-end loaders, cranes, auger trucks, bobcats, masticators, and pole trucks. In addition to SOPS, Western has committed to implementing all PCMs identified for Category B maintenance activities. Typical activities under Category B include but are not limited to:

Transmission Line Maintenance

- Maintenance and repair of existing culvert
- Remove soil deposition around tower legs
- Ground anchors maintenance
- Fill in erosional features on access roads
- Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)
- Grading existing access roads
- Application of herbicides
- Place fill or rock(s) around existing culverts
- Place fill or rock(s) around existing towers or structures
- Vehicle and equipment staging
- Installation and repair of fences and gates
- Installation or replacement of overhead and underground power, communication, or ground electrical line (less than 100 feet)
- Manual removal and/or pruning of danger trees or vegetation
- Mechanical vegetation management by means of masticators, or other similar mechanical equipment

Communication System Maintenance

- Foundations or footings maintenance
- Installation of underground and overhead water, power, communication, or ground electrical line (less than 100 feet)
- Installation of cellular equipment onto existing infrastructure
- Maintenance and repair of existing culverts
- Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)
- Application of soil sterilants and herbicides

3.5.3 Category C – New Infrastructure

Category C maintenance activities are generally those that have the potential to disturb large areas and will utilize heavy equipment to complete particular tasks. Category C maintenance equipment could include, but is not limited to, the use of steel tracked and/or rubber tired bulldozers, graders, backhoes, and front-end loaders. Typical activities under Category C include, but are not limited to:

Transmission Line and Communication System Maintenance

- Adding new access roads
- Installation of new culverts
- Installation of new foundations for storage building at existing facilities
- Erosion-control projects at existing facilities
- Reconductoring
- Mechanical vegetation management by means of bulldozers or other similar mechanical equipment
- Tower/pole relocation/realignment/replacement within existing ROW
- Installation or replacement of overhead and underground power, communication, or ground electrical line (greater than 100 feet)
- Remediation of small spill of oil and hazardous materials (greater than 10 gallons)

3.6 O&M Implementation

As described in section 7, Western has developed a comprehensive O&M geographic information system (GIS), which will be used as the baseline for proactively managing the sensitive resources in the field. This GIS system was partially funded by TANC and developed for Western's line crews and environmental compliance staff, as well as TANC and USFS personnel.

Western has color-coded each span based on the resource sensitivities identified within the ROW, as well as the potential for the maintenance categories (A, B, C) to cause adverse effects. The following bullets provide the negotiated actions for each color.

- **Green** = Sensitive resources absent (no PCMs need to be followed); maintenance crews may proceed while complying with SOPs.

- **Yellow** = Maintenance crews must comply with applicable PCMs and SOPs; contacting Western's Natural Resources Department is not necessary unless there are questions regarding PCMs.

- **Red** = PCMs are of sufficient complexity to necessitate contacting Western's Natural Resources Department; securing a qualified monitor or consulting with tribes, SHPO, U.S. Fish and Wildlife Service, or other federal agencies may be required.

4. FIRE PLAN

This fire plan establishes standards and practices that will minimize the risk of fire danger, and in case of fire, provide for immediate suppression and notification.

4.1 Fire Call Directory

USFS understands that Western will be completing maintenance activities within the COTP ROW throughout the year. Should Western (or a representative of Western) identify a potential fire during maintenance activities, Western (or a representative of Western) will immediately call 911 and report the location and extent of the fire. In addition, USFS requests that Western (or representative of Western) contact USFS within 15 minutes of identifying a potential fire using the phone numbers listed below in Table 4-1. The phone numbers listed in Table 4-1 will be included in all contracts between Western and private maintenance contractors. In addition, all Western line crew supervisors will have the numbers readily available, so that communication between Western, TANC, and USFS is conducted in a timely manner.

Table 4-1 USFS Fire Contact Numbers

Dispatch Center	Daytime #	After Hours #
Shasta-Trinity ECC (north of Mayfield Rd)	(530) 226-2400	Same
Yreka ECC (south of Mayfield Rd)	(530) 842-7066	Same

In addition to USFS fire contact numbers, this O&M plan also includes emergency numbers for Western and TANC personnel. Western has provided the dispatch office number for its Sierra Nevada Region, as well as Western's local transmission maintenance supervisor (see Table 4-2). Should USFS identify a fire near Western's existing ROW, USFS will contact the emergency personnel listed in Table 4-2.

Table 4-2 Western and TANC Fire Contact Numbers

Name	Daytime #	After Hours #
Western Dispatch Office	(916) 353-2201	Same
Brian Adams, Western Lineman Foreman III	(530) 247-6733 (530) 604-4310	(530) 604-4310
Bryan Griess, TANC	(916) 852-1673	(916) 712-1971

The fire contact directory will be updated by Western and USFS each year (preferably before April 1st of each year). Updates will include dispatch centers, key contacts, titles, and daytime and after-hour phone numbers. The updated directory will be produced by Western and distributed to all appropriate Western, TANC, and USFS representatives.

4.2 Fire Season

The fire season is largely dependent on weather, fuel moisture, and the calculated fire indices. Fire season typically starts in June and ends in early October or when a season-ending rain event occurs. Most wildland fire starts occur in July and August; the most severe fires typically occur in August and September, when fuel moistures reach

their yearly minimum. Whiskeytown NRA and Shasta-Trinity National Forest declare a joint start- and end-of-fire season, depending on current conditions. It should be noted that wildland fires have occurred in the area in all twelve months of a calendar year.

4.3 Fire Precaution Measures

4.3.1 Fire Conditions

During periods of high temperatures, dry vegetation, and/or high winds, Western (or a representative of Western) will be responsible for checking daily fire levels during the fire season and ceasing all operations when fire levels require emergency precautions. Depending on the fire risk, Western may schedule early morning work with no or limited work in the afternoon hours. Western may also require the maintenance contractor to cease operations at any time due to a fire danger.

In extreme fire conditions, Western may require cessation of operations on a day-by-day basis based on the fire index. During fire season, Western (or a representative of Western) will have one full-time person (the fire watch) for the sole purpose of monitoring the fire index and watching the mechanical operations for fire ignition. The fire watch will monitor the humidity level and cease mechanical operations if the humidity level falls below 20 percent.

Western (or a representative of Western) will stay on site for one hour (or longer if required by the USFS) after the end-of-the-day mowing operations to ensure fire safety and that no smoldering or burning materials are present. Western will abide by the current fire restrictions for campfires, smoking, and welding.

4.3.2 Water Supply for Fire Fighting

For areas in remote locations or those areas that require mechanical mastication, a 300-gallon tank (minimum) filled with water will be stored at the worksite(s) during the fire season. The tank will be equipped with an engine-driven pump and a minimum of 250 feet of hose. The water tank will be operational, mobile, and kept at the worksite.

4.3.3 Engines Equipped with Spark Arresters

All internal and external combustion engines at the worksite will be equipped with spark arresters on the exhaust that meet USFS requirements. The arresters must meet the requirements established by the SAE Standard J335 or USFS Specification 5100-1; 36 CFR 261.52 explains the requirements. The spark arresters must be properly installed and maintained at all times.

4.3.4 Other Fire Requirements

All maintenance crews using masticators will carry reliable communication (cell phone, satellite phone, or radio) to summon help in the event of a fire. If cellular coverage is not available, the location of the nearest public phone will be identified to all crew members. When reporting a fire, the following information will be reported:

- Name, contact telephone number, and project name;
- Location information including legal description (township, range, section) and descriptive location (commonly known reference point);
- Fire information including acres affected, rate of spread, and wind conditions.

During times of high fire danger, masticators will concentrate on standing trees, leaving high stumps, and keeping the chipper out of rocks. All equipment, including pickups/service vehicles and machines, will be equipped with a shovel, water pump, and fire extinguishers. No welding will occur on site without prior approval of the land manager. Western (or a representative of Western) will follow all appropriate fire restrictions issued by federal and state agencies.

5. STANDARD OPERATING PROCEDURES (SOPs)

Western has developed a set of SOPs to reduce public and worker safety hazards and limit potential impacts to the environment associated with the maintenance activities described in section 3. These SOPs will be followed at all times, during all O&M activities, and throughout the project area, including within the USFS boundary. At a minimum, Western will conduct an annual training class on these procedures for all maintenance crews. Table 5-1 provides a list of SOPs by issue area.

These SOPs will also be included in all contracts and agreements with maintenance contractors. All contractors will be responsible for understanding the requirements, schedule limitations, and notification procedures associated with each SOP. Prior to each maintenance job, Western will reiterate to the contractor the requirements to comply with the SOPs during all phases of the maintenance job.

Maintenance crews (Western personnel or contractors) will notify Western's Natural Resources Department of any noncompliance with an SOP. Western will review the noncompliance notice and discuss any remedies associated with the noncompliance with TANC, USFS and other potentially affected resource agencies.

Table 5-1 Standard Operating Procedures (SOPs) by Issue Area

SOP	Description
AESTHETICS	
AES-SOP-1	Material storage and staging areas will be selected to minimize views from public roads, trails, and nearby residences, to the extent feasible. During O&M, the work site will be kept clean of debris and construction waste. For areas where excavated materials will be visible from sensitive viewing locations, excavated materials will be disposed of in a manner that is not visually evident, in coordination with the land owner (as appropriate), and in compliance with applicable regulations.
AES-SOP-2	Replacement structures and hardware (e.g., conductors and insulators) will be replaced in kind, to the extent feasible, while ensuring that structures and hardware that are visible from sensitive viewing locations will have appropriate colors, finishes, and textures to most effectively blend into the visible landscape. If structures are visible from more than one sensitive viewing location, and backdrops are substantially different from different vantage points, the darker color will be selected, because dark colors tend to blend into landscape backdrops.
AES-SOP-3	Maintenance operations will be conducted in a manner that limits unnecessary scarring or defacing of the natural surroundings to preserve the natural landscape to the extent possible. To preserve vegetative screening from public areas, tree removal and vegetation clearing will be minimized along state highways and near recreation sites, and wherever possible along scenic roadways.
AIR QUALITY	
AQ-SOP-1	Western will adhere to all requirements of those agencies having jurisdiction over air quality matters, and any necessary permits for operation and maintenance will be obtained.
AQ-SOP-2	Machinery and vehicles will be kept in good operating condition and older equipment will be replaced with equipment meeting more stringent California emission standards; appropriate emissions-control equipment will be maintained for vehicles and equipment, per California, EPA, and Western air-emission requirements.
AQ-SOP-3	Idle equipment will be shut down when not in active use; visible emissions from stationary generators will be controlled.
AQ-SOP-4	Dust-control measures will be implemented in road construction and maintenance, as needed. Trucks transporting loose material will be covered or maintain at least 2 feet of freeboard and will not create any visible dust emissions.
AQ-SOP-5	There will be no open burning of construction trash.
AQ-SOP-6	Grading activities will cease during periods of high winds (as determined by local air quality management districts).
AQ-SOP-7	Major operations will be avoided on days when the local Air Quality Index is expected to exceed 150.
BIOLOGICAL RESOURCES	
B-SOP-1	All contract crews will complete biological pre-maintenance awareness training to ensure they are familiar with sensitive biological resources and associated SOPs and PCMs. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance.

SOP	Description
B-SOP-2	Western crews will complete annual awareness training to ensure they are familiar with sensitive biological resources and associated SOPs and PCMs. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. Further, Western crews will have access to the O&M GIS database in the field to be able to identify sensitive resources and associated PCMs.
B-SOP-3	O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day, or have escape ramps provided to prevent the entrapment of wildlife. Trenches and holes will be inspected for entrapped wildlife before being filled. Any entrapped animals will be allowed to escape voluntarily before O&M activities resume, or they may be removed by qualified personnel, with an appropriate handling permit if necessary.
B-SOP-4	Vehicle traffic will be restricted to designated access routes and the immediate vicinity of O&M sites. Vehicle speeds will not exceed 15 mph on access and maintenance roads and 10 mph on unimproved access routes. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas, to the maximum extent feasible.
B-SOP-5	No pets or firearms will be permitted at project sites.
B-SOP-6	At the end of each work day, O&M workers will leave work areas and adjacent habitats to minimize disturbance to actively foraging animals, and remove food-related trash from the work site in closed containers for disposal. Workers will not deliberately or inadvertently feed wildlife.
B-SOP-7	Nighttime O&M activities will be minimized to emergency situations. If nighttime O&M work is required, lights will be directed to the minimum area needed to illuminate project work areas.
B-SOP-8	Where feasible and appropriate, tall dead trees will be topped and left in place as snags or as downed logs to support wildlife dependent on these important features, in coordination with the land owner.
B-SOP-9	Mortalities or injuries to any wildlife that occur as a result of project- or maintenance-related actions will be reported immediately to the Western Natural Resources Department or other designated point of contact, who will instruct O&M personnel on the appropriate action, and who will contact the appropriate agency if the species is listed. The phone number for the Western Natural Resources Department or designated point of contact will be provided to maintenance supervisors and to the appropriate agencies.
B-SOP-10	Caves, mine tunnels, and rock outcrops will never be entered, climbed upon, or otherwise disturbed.
B-SOP-11	If a pesticide label stipulates a buffer zone width for protection of natural resources that differs from that specified in a PCM, the buffer zone width that offers the greatest protection will be applied.

SOP	Description
B-SOP-12	To protect nesting birds (birds not specifically protected by PCMs but protected by the Migratory Bird Treaty Act), whose nests could occur within the ROW, Western and its subcontractors will perform Category B&C O&M activities outside the nesting season, which runs from March 1 through August 15 in the Valley region and from April 1 through September 15 in the Redding/Trinity and Round Mountain/Modoc regions. Alternatively, a qualified biologist will conduct nesting-bird surveys prior to project activities. For special-status birds, see specific PCMs. • An additional survey may be required if gaps between the survey and the project activity exceed three weeks. • Should an active nest be discovered, the qualified biologist will establish an appropriate buffer zone (in which O&M activity is not allowed) to avoid disturbance in the vicinity of the nest. Maintenance activities will not take place until the biologist has determined that the nestlings have fledged or that maintenance activities will not adversely affect adults or newly fledged young. • Alternatively, the qualified biologist will develop a monitoring/mitigation plan that permits the maintenance activity to continue in the vicinity of the nest while monitoring nesting activities to ensure that the nesting birds are not disturbed. At such time when Western finalizes an avian protection plan, Western will adhere to the guidance in that document.
B-SOP-13	Measures described in the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee 2006) and *Mitigation Bird Collisions with Power Lines: The State the Art in 1994* (Avian Power Line Interaction Committee 1994) will be implemented during O&M activities to minimize bird mortality and injury. At such time when Western finalizes an avian protection plan, Western will adhere to the guidance in that document.
B-SOP-14	At completion of work and at the request of the land owner/manager, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
B-SOP-15	Prior to any application of herbicide, Western will query the California Department of Pesticide Regulation PRESCRIBE database, entering location information by county, township, range, and section, entering both the commercial name and the formulation of the desired pesticide, and will follow all use limitations provided to ensure compliance with applicable pesticide standards. This database is currently located at http://www.cdpr.ca.gov/docs/endspec/prescint.htm. The measures generated by the PRESCRIBE database will supersede those in the PCMs where they are different.
CULTURAL RESOURCES	
C-SOP-1	All contract crews will complete cultural resources pre-maintenance awareness training to ensure they are aware of the locations of cultural resource sites; maintenance methods to be used in areas with sensitive cultural resources; and restrictions required in cultural resources areas (i.e., SOPs and PCMs). Crews will be educated on the Archaeological Resources Protection Act, which makes it a federal offense to willfully damage or remove any artifacts or materials from an archaeological site. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance.

SOP	Description
C-SOP-2	Western crews will complete annual awareness training to ensure they are familiar with sensitive cultural resources and associated SOPs and PCMs. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. Further, Western crews will have access to the O&M GIS database in the field to be able to identify sensitive resources and associated PCMs.
C-SOP-3	Operation of vehicles or heavy construction equipment will be avoided in areas that are not designated transmission line and legal access road ROWs or other established transportation routes. This measure will minimize the possibility of disturbing unmapped cultural resources.
C-SOP-4	Upon discovery of potential buried cultural materials, work within 50 feet of the find will be halted and the discovery will be reported immediately to the Western Natural Resources Department or other designated point of contact. Western will comply with provisions in the National Historic Preservation Act and consult with the California State Historic Preservation Officer and appropriate tribes to determine measures to avoid the resource or mitigate during maintenance activities.
GEOLOGY AND SOILS	
GS-SOP-1	Should Western need to modify or relocate a structure, Western will have a certified professional geotechnical engineer evaluate the potential for geotechnical hazards and unstable slopes.
GS-SOP-2	Upon completing ground-disturbing work, all work areas will be left in a condition that facilitates natural and appropriate vegetation regrowth, provides for proper drainage, and prevents erosion.
GS-SOP-3	All O&M activities must be in conformance with Western's Integrated Vegetation Management Environmental Guidance Manual and Erosion Control and Revegetation Plan.
GS-SOP-4	Wet areas will be avoided to the extent practicable and all activity will be minimized during winter and other wet periods to prevent damage (e.g., rutting, erosion, soil compaction). If wet areas cannot be avoided, Western will use wide-track or balloon tire vehicles and equipment or timber mats.
GS-SOP-5	All excavated soil will be backfilled and tamped at the location of excavation and used to provide positive drainage, or will be hauled off site to an area appropriate for disposal of excavated material, in accordance with federal, state, and local regulations and in coordination with the land owner.
GS-SOP-6	Use of ground-disturbing mechanical equipment to remove vegetation will be avoided on continuous slopes over 35 percent, unless the threat of erosion is minimal because of bedrock, or reseeding will be performed. Short distances on slopes up to 40 percent will be allowable.
GS-SOP-7	Where soil has been severely disturbed and the establishment of vegetation will be needed to minimize erosion, appropriate measures, as approved by the federal land manager, will be implemented to establish an adequate cover of native grass or other native vegetation as needed. All mulch and seed will be of high purity to prevent the spread of noxious weeds. Soil preparation, seeding, mulching, and fertilizing will be repeated as necessary to insure soil stabilization and revegetation acceptable to the federal land manager.
GS-SOP-8	Disturbance and removal of soils and vegetation will be limited to the minimum area necessary for access and O&M activities. Grading will be minimized to the extent possible. When required, grading will be conducted such that run-off waters flow predominantly away from watercourses/washes to reduce the potential for material to enter the watercourse/wash.

SOP	Description
LAND USE	
LU-SOP-1	Any damage (e.g., to fences and gates) during maintenance activities will be repaired or replaced, and restored to their preconstruction condition.
LU-SOP-2	Western will notify affected land owners for vegetation management and encroachment activities, as appropriate. Western will post proper signage in areas requiring temporary closure or limited access due to O&M activities.
LU-SOP-3	The spread of noxious weeds will be minimized. Western will clean seeds from ground-disturbing equipment before entering cropland or forestland, or moving between these subject areas.
NOISE	
NOISE-SOP-1	All vehicles and equipment will be equipped with required exhaust-noise-abatement devices.
NOISE-SOP-2	For long-term O&M activities confined to a specific area, Western's Natural Resources Department will be contacted to evaluate local thresholds and all requirements of those agencies having jurisdiction over noise matters.
PUBLIC HEALTH	
PH-SOP-1	For identified locations, structures and/or shield wire will be marked with highly visible devices (e.g., lights and marker balls) where required by governmental agencies (e.g., Federal Aviation Administration) with jurisdiction.
PH-SOP-2	Signs and/or flags will be erected in areas of public access to indicate maintenance activities are taking place; workers will be conspicuous by wearing high-visibility vests and hardhats.
PH-SOP-3	O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day, or have escape ramps provided to prevent injury of the public and workers.
PH-SOP-4	With regard to herbicide use: • All herbicide applicators will have received training and be licensed in appropriate application categories. • Herbicide-free buffer zones will be maintained per label instructions. • All herbicide label and material safety data sheet instructions will be followed regarding mixing and application standards and equipment-cleaning standards to reduce potential exposure to the public through drift and misapplication. • Western will ensure that areas treated with herbicides will be posted and re-entry intervals specified and enforced in accordance with label instructions. Herbicides and equipment will never be left unattended in areas with unrestricted access. • Climate, geology, and soil types will be considered (including rainfall, wind, depth of aquifer, and soil permeability) in selecting the herbicide with lowest relative risk of migrating to water resources. • There will be no aerial application of herbicides. • All herbicide spill requirements will be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures.

SOP	Description
PH-SOP-5	With regard to hazardous materials: • Hazardous materials will not be drained onto the ground, into streams, or into drainage areas. • Any release, threat of release, or discharge of hazardous materials within the project area in connection with project activities will be cleaned up and/or remediated, in accordance with applicable federal, state, and local regulations. • All construction waste, including trash and litter, other solid waste, petroleum products, and other potentially hazardous material will be removed in accordance with applicable federal, state, and local regulations. • Discovery of, or the accidental discharge of, a significant amount of hazardous materials will be immediately reported to Western's dispatch and Natural Resources Department. • There will be no storage of hazardous materials in the project area without approval from the authorized officer. • Upon termination of the permit, a report will be submitted to determine whether there had been site contamination and if so, that the remediation met compliance with applicable laws.
PH-SOP-6	All contract crews will complete hazardous materials pre-maintenance awareness training to ensure they are aware of SOPs and PCMs, as wells as pertinent regulations and the consequences for non-compliance. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance.
PH-SOP-7	Contractors must submit a spill response plan that is approved by Western. Clean-up actions and costs resulting from contractor misconduct will be the responsibility of the contractor and approved by Western's Natural Resources Department.
PH-SOP-8	Western crews will complete annual awareness training to ensure they are familiar with SOPs and PCMs related to hazardous materials. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms.
PH-SOP-9	All flammable vegetation will be removed a minimum of 30 feet from tower center and conductors or as required by federal requirements, and to ensure access to towers.
PH-SOP-10	Western and its contractors will comply with all applicable federal and state regulations regarding fire suppression, including but not limited to having all equipment be equipped with a shovel, water pump, and fire extinguisher, the use of spark arrestors on all internal and external combustion engines, verification of daily fire levels during fire season, and a minimum of a 300-gallon water tank with a minimum of 250 feet of hose.
RECREATION	
REC-SOP-1	Western will direct members of the public to alternate trails or recreation areas if blocked by machinery or for safety purposes.
TRANSPORTATION	
TRANS-SOP-1	All lane closures or obstructions on major roadways associated with maintenance activities will be restricted to off-peak periods to minimize traffic congestion and delays, and will be coordinated with appropriate authorities (e.g., Caltrans).

SOP	Description
WATER RESOURCES	
WR-SOP-1	Non-biodegradable debris will not be deposited in the ROW.
WR-SOP-2	Should Western need to relocate a structure or access road affecting waters of the United States or waters of the state, Western will consult with TANC and, as appropriate, the U.S. Army Corps of Engineers (USACE) and the California State Water Resources Control Board (SWRCB). Bridges will be used at new stream crossings wherever possible. Any discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the United States will be subject to USACE regulations under the Clean Water Act, and could require a permit. Western Natural Resources Department will be contacted. Any discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the state will be subject to SWRCB regulations under the Porter-Cologne Water Quality Control Act and applicable Clean Water Act regulations as administered on behalf of the United States by the SWRCB.
WR-SOP-3	Sediment-control devices, such as placement of native rock, will be used at all dry wash crossings.
WR-SOP-4	Run-off from the maintenance site will be controlled and will meet the State Water Resources Control Board storm water requirements in the Storm Water Pollution Prevention Plan.
WR-SOP-5	Run-off control structures, diversion ditches, erosion-control structures, and energy dissipaters will be cleaned, maintained, repaired, and replaced to meet the standards set by applicable permits and the Storm Water Pollution Prevention Plan, or where such a plan is inapplicable, similar standards set by Western or the applicable federal land manager.
WR-SOP-6	All contaminated discharge water created by O&M activities (e.g., concrete washout, pumping for work-area isolation, vehicle wash water, drilling fluids) will be contained and disposed of in accordance with applicable federal, state, and local regulations.
WR-SOP-7	Vehicles will be inspected daily for fluid leaks before leaving the staging area.
WR-SOP-8	Impacts to areas under the jurisdiction of the USACE and SWRCB shall be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible and the action is not covered under nationwide permits and/or western's programmatic 401 permit, Western would obtain 404/401 permits applicable to the action. Western would perform an impact assessment for the O&M activity, which would identify and quantify the acreage of each jurisdictional area (wetland, riparian, etc.). Western would provide creation, restoration, or preservation mitigation consistent with the 404/401 permitting requirements. The mitigation shall be implemented prior to or concurrent with the action, would be in-kind habitat, would include the appropriate buffers to protect the functions and values of the jurisdictional mitigation area, and is anticipated would be in close proximity to the impact or in the same watershed (Valley) or Resource Conservation District (Redding/Trinity) or Resource Conservation and Development agency (Round Mountain/Modoc). The mitigation ratio would be determined during the permit process, but within a range of 1:1 to 4:1, depending on the sensitivity of the habitat and other factors. If required, annual reporting to USACE and/or SWRCB would provide a complete accounting of impacts and mitigation.

Note: Prior to commencement of O&M activities, all personnel will be trained on the implementation of SOPs. Western will ensure that certified personnel (e.g. certified professional in erosion and sediment control, certified professional in storm water quality) are available for review of proper implementation of SOPs.

6. PROJECT CONSERVATION MEASURES (PCMs)

6.1 Development of PCMs

Western has completed extensive biological and cultural resource surveys along the North Area, facilities, communication sites, ROWs, and documented access roads. These detailed surveys inventoried all biological habitat types, assessed the potential for sensitive species occurrence, and inventoried all cultural resources along the ROWs and access roads. All of this site-specific resource information has been included in Western's GIS as baseline for resource management during O&M activities. See section 7 for details on Western's GIS database.

In coordination with USFS and Western's line crews, Western identified the different types of O&M activities that may occur along the ROW and legal access roads. These maintenance activities were grouped into three categories based on the level of potential for adverse effects: Category A (inspection and minor maintenance activities), Category B (routine maintenance activities), and Category C (new infrastructure). See section 3.4 for a detailed description of the O&M categories.

Based on the occurrence or potential for occurrence of sensitive resources, as well as on the projected O&M activities that may occur, Western developed PCMs to proactively protect the sensitive resources during O&M activities. Each sensitive resource has an associated PCM for each category of activity (A, B, and C). PCMs are listed in Table 6-1 (Special-status Plan PCMs), Table 6-2 (Special-status Wildlife and Fish PCMs), Table 6-3 (Water Resources/Aquatic Habitat PCM's), and Table 6-4 (Cultural Resource PCM's). PCMs protecting water resources and aquatic habitats will also protect fish, wildlife, and plants found in these habitats.

In accordance with the special-status species matrix below, federally and state-listed species as well as USFS-sensitive species will be protected on the COTP ROW on USFS land.

	Western ROW (PACI, CVP)	COTP ROW
BLM	• Federally listed species • State-listed species • BLM-sensitive species	• Federally listed species • State-listed species • BLM-sensitive species
NPS	• Federally listed species • NPS species	• Not applicable
USFS	• Federally listed species • State-listed species • USFS-sensitive species	• Federally listed species • State-listed species • USFS-sensitive species
Private	• Federally listed species • State-listed species	• Federally listed species • State-listed species

6.2 Implementation of PCMs

Prior to a particular O&M activity, Western and USFS will use Western's GIS database to identify the sensitive resources within the proposed O&M activity area. Based on the sensitive resources that are identified, GIS will display the associated PCM numbers identified for the proposed work area. The PCM number will be used to reference the PCM text in Tables 6-1 through 6-4. Each PCM number has text describing the requirements associated with each O&M maintenance category (A, B, C). Generally, the PCM requirements for maintenance Category C (new infrastructure) are more stringent than those of Category A (inspection and minor maintenance activities).

Western will ensure that all maintenance crews (and maintenance contractors) understand each particular PCM identified in the work area. Compliance with all applicable PCMs will be included in the contract of each maintenance contractor.

6.3 Changes to PCMs

Should Western want to change a PCM for a particular resource, Western will contact TANC and USFS in writing and discuss the proposed changes to the PCM. The revised PCM will likely be similar in magnitude and extent as the original PCM. Should a resource no longer require protection (e.g., delisted species) by U.S. Fish and Wildlife Service, State Historic Preservation Office, or other appropriate agency, Western, TANC, and USFS will document the removal of the resource in a formal memo, and then remove the resource from Western's GIS database.

Western will update the GIS data when new resources require protection (e.g., newly listed species). Additionally, Western will review the GIS data at least once a year to verify that all resources are accurate. New resources may require new PCMs, depending on the resource and the O&M activity. Western will coordinate with TANC and USFS in developing new PCMs for newly listed resources. New PCMs for newly listed resources will not become effective until jointly approved in writing by TANC, USFS, and Western.

Table 6-1 Special-status Plant Project Conservation Measures

PCM-ID	Species Name	Status	Activity Category	PCM
UPLAND SPECIES				
PCM-B001	*Allium sanbornii* var. *sanbornii* Sanborn's onion	CNPS List 4/ NPS	A	Follow SOPs.
			B	From May 1 to September 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and September 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the marked area, 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times in the vicinity of this species with the exception of direct application to target vegetation. All work will be hauled off site. Ground disturbing activities require a survey by a qualified biologist to mark existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B002	*Amsinckia grandiflora* Large-flowered fiddleneck	FE/SE/1B.1	A	Follow SOPs.
			B	From April 1 to May 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between April 1 and May 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the marked area, 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities between April 1 and May 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance during this time frame will be prohibited within the flagged boundary unless otherwise directed by all appropriate resource agencies. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants. If ground disturbance is required within a plant population, it must be completed after the plant has set seed (after May 31) and the top 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B003	*Arctostaphylos mallori* Mallory's manzanita	CNPS List 4/ NPS	A	Follow SOPs.
			B	Vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. A qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within flagged boundary unless otherwise directed by NPS. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B004	*Arnica venosa* Shasta County arnica	CNPS List 4/NPS	A	Follow SOPs.
			B and C	Follow PCM-W002. If vegetation-management activities are proposed between May 1 and July 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within flagged boundary unless otherwise directed by NPS.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B005	*Calystegia atriplicifolia* ssp. *buttensis* Butte County morning-glory	CNPS List 1B.2/BLMS/FSS	A	Follow SOPs
			B	From May 1 to July 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and July 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between May 1 and July 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM and/or USFS. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B006	*Castilleja rubicundula* ssp. *rubicundula* Pink creamsacs	CNPS List 1B.2/BLMS	A	Follow SOPs.
			B	From April1 to June 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between April 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between April 1 and June 30 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B007	*Chamaesyce ocellata* ssp. *rattanii* Stony Creek spurge	CNPS List 1B.2/BLMS	A	Follow SOPs.
			B	From May 1 to October 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and October 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between May 1 and October 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B008	*Clarkia borealis* ssp. *arida* Arid northern clarkia	CNPS List 1B.1/BLMS	A	Follow SOPs.
			B	From June 1 to August 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation management activities are proposed between June 1 and August 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between June 1 and August 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B009	*Cordylanthus palmatus* Palmate-bracted bird's beak	FE/SE/1B.2	A	Follow SOPs.
			B	From May 1 to October 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and October 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between May 1 and October 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance during this time frame will be prohibited within the flagged boundary unless otherwise directed by all appropriate resource agencies. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants. If ground disturbance is required within a plant population, it must be completed after the plant has set seed (after May 31) and the top 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B010	*Cypripedium fasciculatum* Clustered lady's slipper	CNPS List 4/NPS/BLMS/ FSS	A	Follow SOPs and PCM-W002 (in aquatic habitat).
			B	Follow all measures listed for A. From June 1 to August 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between June 1 and August 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS and/or BLM and/or USFS. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B011	*Eschscholzia rhombipetala* Diamond-petaled California poppy	CNPS List 1B.1/BLMS	A	Follow SOPs.
			B	From March 1 to April 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between March 1 and April 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between March 1 and April 30 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B012	*Fritillaria pluriflora* Adobe lily	CNPS List 1B.2/BLMS	A	Follow SOPs.
			B	From February 1 to April 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between February 1 and April 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-013	*Iliamna bakeri* Baker's globe mallow	CNPS List 4.2/BLMS/FSS	A	Follow SOPs.
			B	From June 1 to September 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between June 1 and September 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM and/or USFS. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B014	*Lasthenia conjugens* Contra Costa goldfields	FE/CNPS List 1B.1	A	Follow SOPs.
			B	From March 1 to June 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation management activities are proposed between March 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between March 1 and June 30 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance during this time frame will be prohibited within the flagged boundary unless otherwise directed by all appropriate resource agencies All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants. If ground disturbance is required within a plant population, it must be completed after the plant has set seed (after June 30) and the top 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B015	*Neviusia cliftonii* Shasta snow-wreath	CNPS List 1B.2/BLMS/FSS	A	Follow SOPs.
			B	Vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. A qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM and/or USFS. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B016	*Pseudobahia bahiifolia* Hartweg's golden sunburst	FE/SE/ CNPS List 1B.1	A	Follow SOPs/
			B	From March 1 to May 31, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between March 1 and May 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between March 1 and May 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by all appropriate resource agencies. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants. If ground disturbance is required within a plant population, it must be completed after the plant has set seed (after May 31) and the top 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B017	*Sedum paradisum* Canyon Creek stonecrop	CNPS List 1B.2/NPS/ BLMS/FSS	A	Follow SOPs.
			B	If vegetation-management activities are proposed between May 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B018	*Sidalcea robusta* Butte County checkerbloom	BLMS	A	Follow SOPs.
			B	From April 1 to June 30 vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between April 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B018 (cont.)	*Sidalcea robusta* Butte County checkerbloom	BLMS	C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B019	*Triteleia crocea* var. *crocea* Yellow triteleia	CNPS List 4/ NPS	A	Follow SOPs.
			B	From May 1 to June 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the marked area, 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. All work will be hauled off site. Ground-disturbing activities require a survey by a qualified biologist to mark existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
VERNAL POOLS, VERNAL POOL GRASSLANDS, AND SEASONAL WETLANDS				
PCM-B020	*Calochortus longebarbatus* var. *longebarbatus* Long-haired star tulip	CNPS List 1B.2/BLMS/FSS	A	Follow SOPs, PCM-W001, and PCM-W002 (in appropriate habitat).
			B	Follow all measures listed for A. From May 1 to June 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between May 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the marked area, 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. All work will be hauled off site. Ground disturbing activities require a survey by a qualified biologist to mark existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B021	*Chamaesyce hooveri* Hoover's spurge	FT/CNPS List 1B.1	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B021 (cont.)	*Chamaesyce hooveri* Hoover's spurge (cont.)	FT/CNPS List 1B.1 (cont.)	C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B021a			A, B, and C	Critical Habitat: Follow SOPs, PCM-W001a, and PCM-B021.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B022	*Gratiola heterosepala* Boggs Lake hedge-hyssop	SE/ CNPS List 1B.1	A and B	Follow SOPs, PCM-W001, and PCM-W002. Where impacts to listed plants cannot be avoided, the top 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B023	*Juncus leiospermus* var. *ahartii* Ahart's dwarf rush	CNPS List 1B.1	A and B	Follow SOPs and PCM-W001.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B024	*Juncus leiospermus* var. *leiospermus* Red Bluff dwarf rush	CNPS List 1B.1/BLMS/FSS	A and B	Follow SOPs and PCM-W001.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B025	*Limnanthes floccosa* ssp. *californica* Butte County meadowfoam	FE/SE/ CNPS List 1B.1	A and B	Follow SOPs, PCM-W001, and PCM-W002. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B025a			A, B, and C	Critical Habitat: Follow PCM-W001a and PCM-B025.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B026	*Paronychia ahartii* Ahart's paronychia	CNPS List 1B.1/BLMS	A	Follow SOPs and PCM-W001 (in appropriate habitat).
			B	Follow all measures listed for A From March 1 to June 30, vehicle access will be permitted only on well-established roads until the site has been cleared by a qualified biologist. All vehicles will have rubber tires. Off-road travel will be avoided to the extent possible. If vegetation-management activities are proposed between March 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Herbicide use will be prohibited at all times with the exception of direct application to target vegetation. Ground-disturbing activities proposed between March 1 and June 30 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM. All work will be hauled off site. Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B027	*Navarretia heterandra* Tehama navarretia	CNPS List 4/NPS	A and B	Follow SOPs and PCM-W001.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B028	*Neostapfia colusana* Colusa grass	FT/SE/ CNPS List 1B.1	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B029	*Oenothera deltoides* ssp. *howellii* Antioch Dunes evening primrose	FE/SE/CNPS List 1B.1	A	Follow SOPs
			B	If vegetation-management activities are proposed between March 1 and September 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by USFS or BLM.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B030	*Orcuttia pilosa* Hairy Orcutt grass	FE/SE/ CNPS List 1B.1	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B030a			A, B, and C	Critical Habitat: Follow PCM-W001a and PCM-B030
PCM-B031	*Orcuttia tenuis* Slender Orcutt grass	FT/SE/ CNPS List 1B.1/FSS	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B031a			A, B, and C	Critical Habitat: Follow PCM-W001a and PCM-B031.
PCM-B032	*Tuctoria greenii* Greene's tuctoria	FE/SR/ CNPS List 1B.1	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B032a			A, B, and C	Critical Habitat: Follow PCM-W001a, and PCM-B032.
PCM-B033	*Tuctoria mucronata* Solano grass	FE/SE/ CNPS List 1B.1	A and B	Follow SOPs and PCM-W001. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
SEEP, SPRING, POND, LAKE, CREEK, MARSH SPECIES				
PCM-B034	*Astragalus tener* var. *ferrisiae* Ferris's milkvetch	CNPS List 1B.1/BLMS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between April 1 and May 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) and the perimeter of the spring or wet meadow prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities proposed between April 1 and May 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B035	*Carex vulpinoidea* Fox sedge	CNPS List 2.2/NPS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between May 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B036	*Cryptantha crinita* Silky cryptantha	CNPS List 1B.2/BLMS	A	Follow SOPs, PCM-W002, and PCM-W001.
			B	Follow PCM-W002. If vegetation-management activities are proposed between April 1 and May 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) and the perimeter of the spring or wet meadow prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities proposed between April 1 and May 31 require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B037	*Eryngium racemosum* Delta button celery	SE/CNPS List 1B.1	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between June 1 and September 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) and the perimeter of the spring or wet meadow prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by Western after discussion with CDFG.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B038	*Lilaeopsis masonii* Mason's lilaeopsis	SR/CNPS List 1B.1	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between April 1 and November 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by Western after discussion with CDFG.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B039	*Puccinellia howellii* Howell's alkali grass	CNPS List 1B.1/BLMS/NPS	A	Follow SOPs and PCM-W002.
			B and C	Follow PCM-W002. If vegetation-management activities are proposed between April 1 and June 30, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by BLM and/or NPS.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.
PCM-B040	*Smilax jamesii* English Peak greenbriar	1B.3/FSS/BLMS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between May 1 and July 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by USFS or BLM.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status	Activity Category	PCM
PCM-B041	*Trillium ovatum* ssp. *oettingeri* Salmon Mountains wakerobin	CNPS List 4.2/NPS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. If vegetation-management activities are proposed between May 31 and July 31, a qualified biologist will mark plant populations (including a 50-foot buffer zone) prior to O&M activity. Within 100 feet of the marked area, the following work area limits will be provided: 1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, and 2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited. Ground-disturbing activities require a survey by a qualified biologist to flag existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by NPS.
			C	Follow all measures listed for A and B. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

- Annual herbs have limited operating periods (LOPs) for off-road travel, vegetation management, and ground disturbance that correspond to the life history of the plant (e.g., when the plant sets seed and/or is non-vegetative).
- In general, perennial herbs have LOPs for off-road travel and vegetation management that correspond to the life history of the plant (e.g., when the plant sets seed and/or is non-vegetative).
- Ground disturbance in suitable habitat for perennials requires a survey due to the presence of underground plant parts (e.g., roots, bulbs).
- There are no LOPs for shrubs because there is not a non-vegetative period.
- Herbicide use will be prohibited at all times (with the exception of direct application to target vegetation) in areas that could support special-status plants. Western will refer to the PRESCRIBE database for specific measures regarding herbicide application.

Table 6-2 Special-status Wildlife and Fish Project Conservation Measures

PCM-ID	Species Name	Status[1]	Activity Category	PCM
INVERTEBRATES				
PCM-B042	Conservancy fairy shrimp *Branchinecta conservatio*	FE	A, B, and C	Follow SOPs and PCM-W001. If conservancy fairy shrimp habitat cannot be avoided, the following will be implemented. Protocol-level preconstruction surveys will be required or species presence will be assumed. If conservancy fairy shrimp are present or assumed present, Western will initiate formal consultation with FWS. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B042a			A, B, and C	Critical habitat: Follow PCM-B042. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B043	Delta green ground beetle *Elaphrus viridis*	FT	A, B, and C	Follow SOPs and PCM-W001. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B043a			A, B, and C	Critical habitat: Follow PCM-B043. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B044	Longhorn fairy shrimp *Branchinecta lynchi*	FE	A, B, and C	Follow SOPs and PCM-W001. If longhorn fairy shrimp habitat cannot be avoided, the following will be implemented. Protocol-level preconstruction surveys will be required or species presence will be assumed. If longhorn fairy shrimp are present or assumed present, Western will initiate formal consultation with FWS. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B045	Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	A	Follow SOPs at all times and PCM-W002 for elderberries in riparian habitat.
			B	Prior to initiating vegetation clearance in the Central Valley below 3,000 feet with elderberry plants present, qualified personnel[2] will clearly flag or fence each elderberry plant that has a stem measuring one inch or greater in diameter at ground level. If an elderberry plant meeting this criterion is present: A minimum buffer zone of 20 feet outside of the dripline of each elderberry plant will be provided during all routine O&M activities, within which only manual methods for vegetation clearing will be allowed. No insecticides, herbicides, fertilizers, or other chemicals will be used within 100 feet of an elderberry plant, except direct application to target vegetation (e.g. injection or cut-stump.)Trimming, rather than removal of shrubs, will be used where feasible. Directional felling of trees and manual cutting of trees prior to removal will be used to minimize impacts to elderberries. Replacement of existing conductor or installation of additional lines will be performed by pulling the line from tower to tower without touching the vegetation in areas where elderberry plants are present. If elderberry plants meeting the size criterion cannot be avoided, Western would refer back to its 2005 BO (USFWS File # 1-1-03-F-0107) in which the take of 10 elderberry shrubs per year for 10 years was addressed and authorized for the counties of Sacramento, Sutter, and Placer. Western is not requesting additional take of the Valley elderberry longhorn beetle, but would like to expand the area where take is allowed to include the North Area ROW Maintenance Project area. Take within this expanded area was previously addressed in Western's 1998 BA (USFWS File # 1-1-97-F-140). Additionally, the 10 take per year for 10 years (started in 2007) is already mitigated for in Western's 27-acre mitigation site in River Bend Park (formerly Goethe Park) in the American River Parkway. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency, as necessary.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B046	Vernal pool fairy shrimp *Branchinecta lynchi*	FT	A, B, and C	Follow SOPs and PCM-W001. If vernal pool fairy shrimp habitat cannot be avoided, the following will be implemented. Protocol-level preconstruction surveys will be required or species presence will be assumed. If vernal pool fairy shrimp are present or assumed present, Western will initiate formal consultation with FWS. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B046a			A, B, and C	Critical habitat: Follow PCM-B046. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B047	Vernal pool tadpole shrimp *Lepidurus packardi*	FE	A, B, and C	Follow PCM-W001. If vernal pool tadpole shrimp habitat cannot be avoided, the following will be implemented. Protocol-level preconstruction surveys will be required or species presence will be assumed. If vernal pool tadpole shrimp are present or assumed present, Western will initiate formal consultation with FWS. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B047a			A, B, and C	Critical habitat: Follow PCM-B047. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
FISHES				
PCM-B048	Central Valley fall/late fall-run chinook salmon *Oncorhynchus tshawytscha*	SSC/FSS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. To comply with the salmon injunction for herbicide applications, Western will ensure that there will be no ground application of any of the chemicals named in the injunction (http://www.cdpr.ca.gov/docs/endspec/salmonid.htm). Currently, the no-use buffer is 60 feet from any salmonid-supporting waters. In-water or near-shore work within the five sub-areas located within the North Area ROW will be performed within the date ranges below, unless otherwise authorized by NMFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet NMFS criteria.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B049	Central Valley spring-run chinook salmon *Oncorhynchus tshawytscha*	FT/ST/FSS	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. To comply with the salmon injunction for herbicide applications, Western will ensure that there will be no ground application of any of the chemicals named in the injunction (http://www.cdpr.ca.gov/docs/endspec/salmonid.htm). Currently, the no-use buffer is 60 feet from any salmonid-supporting waters. In-water or near-shore work within the five sub-areas located within the North Area ROW will be performed within the date ranges below, unless otherwise authorized by NMFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year.. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet NMFS criteria. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B049a	Central Valley spring-run chinook salmon *Oncorhynchus tshawytscha* (cont.)	FT/ST/FSS	A, B, and C	Critical habitat: Follow PCM-B049. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
PCM-B050	Central Valley steelhead *Oncorhynchus mykiss*	FT	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. To comply with the salmon injunction for herbicide applications, Western will ensure that there will be no ground application of any of the chemicals named in the injunction (http://www.cdpr.ca.gov/docs/endspec/salmonid.htm). Currently, the no-use buffer is 60 feet from any salmonid-supporting waters. In-water or near-shore work within the five sub-areas located within the North Area ROW will be performed within the date ranges below, unless otherwise authorized by NMFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet NMFS criteria. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B050 (cont.)	Central Valley steelhead *Oncorhynchus mykiss*	FT	C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B050a			A, B, and C	Critical habitat: Follow PCM-B050. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
PCM-B051	Delta smelt *Hypomesus transpacificus*	FT/ST	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. In-water or near-shore work within the five sub-areas located within the North Area ROW will be preformed within the date ranges below, unless otherwise authorized by NMFS: Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will adhere to the NMFS and CDFG screen criteria (http://swr.ucsd.edu/hcd/fishscrn.htm and http://iep.water.ca.gov/cvffrt/DFGCriteria2.htm) or more recent guidance. All instream work will adhere to an approach velocity of 0.2 feet/second during pumping. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B051a			A, B, and C	Critical habitat: Follow PCM B051. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B052	Green sturgeon *Acipenser medirostris*	FT/SSC	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. In-water or near-shore work within the five sub-areas located within the North Area ROW will be preformed within the date ranges below, unless otherwise authorized by NMFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet NMFS criteria. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B053	Hardhead *Mylopharodon conocephalus*	FSS	A	Follow SOPs and PCM-W002.
			B and C	Follow PCM-W002. Because of potential range overlap with listed salmonids, In-water or near-shore work within the five sub-areas located within the North Area ROW will be preformed within the date ranges below, unless otherwise authorized by USFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B054	Lost River sucker *Deltistes luxatus*	FE/SE	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002 for instream work within or near habitat for the Lost River sucker, including irrigation canals operated by the Tule Lake Irrigation District. Because of potential range overlap with listed salmonids, in-water or near-shore work will only occur between June 1 and October 15 within the North State Tributary Area (any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks), unless otherwise authorized by USFWS. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B055	Rough sculpin *Cottus asperrimus*	ST	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. Because of potential range overlap with listed salmonids, in-water or near-shore work will only occur between June 1 and October 15 within the North State Tributary Area (any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks). Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B056	Sacramento River winter-run chinook salmon *Oncorhynchus tshawytscha*	FE/SE	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. To comply with the salmon injunction for herbicide applications, Western will ensure that there will be no ground application of any of the chemicals named in the injunction (http://www.cdpr.ca.gov/docs/endspec/salmonid.htm). Currently, the no-use buffer is 60 feet from any salmonid-supporting waters. In-water or near-shore work within the five sub-areas located within the North Area ROW will be preformed within the date ranges below, unless otherwise authorized by NMFS: • The Delta: Any of the waterways in the action area that are south and west of the City of Sacramento. June 1 and October 15 of any given year. • The Mainstem Sacramento River - South: The waters of the Sacramento River from the City of Sacramento north to Hamilton City. June 1 and October 15 of any given year. • The Mainstem Sacramento River - North: The waters of the Sacramento River from Hamilton City north to Keswick Dam. December 1 and April 1 of any given year. • Butte, Mill, Deer, and Battle Creeks: Any of the waters that comprise the forks or mainstems of these four named creeks. December 1 and April 1 of any given year. • The North State Tributary Area: Any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks, as described above. June 1 and October 15 of any given year. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet NMFS criteria. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B056a	Sacramento River winter-run chinook salmon *Oncorhynchus tshawytscha* (cont.)		A, B, and C	Critical habitat: Follow PCM-B056. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of NMFS reporting requirements.
PCM-B057	Shortnose sucker *Chasmistes brevirostris*	FE/SE	A	Follow SOPs and PCM-W002.
			B	Follow PCM-W002. Because of potential range overlap with listed salmonids, in-water or near-shore work will only occur between June 1 and October 15 within the North State Tributary Area (any of the waterways in the action area that are north of the City of Sacramento and flow into the mainstem Sacramento River, excluding Butte, Mill, Deer, and Battle Creeks), unless otherwise authorized by USFWS. Instream O&M activities will be completely isolated from the active flowing stream. This will be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodable, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWSreporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
AMPHIBIANS				
PCM-B058	California red-legged frog *Rana draytonii*	FT	A	Follow SOPs and PCM-W002.
			B and C	Follow all measures for Category A above. A Service-approved biologist[3] will identify potential California red-legged frog (CRLF) breeding habitat and will flag a 500-foot buffer. The following restrictions apply within the buffer: • Vehicles must remain on existing access roads and maintain a speed limit of 15mph; • Only manual vegetation removal is allowed; • Only direct (e.g. injection and cut-stump) herbicide application methods are allowed, except when otherwise restricted; • No ground disturbance (e.g. digging or auguring); and • Erosion-control devices will be of a material that will not entrap amphibians. If it is not possible to follow the above-stated measures, a preactivity survey will be conducted no more than 24 hours before O&M activities begin. A Service-approved biologist will remain on site during all activities to ensure protection of CRLFs OR an exclusion barrier will be constructed around the work site, following Service-approved methods and materials, which will be removed at the end of the work activity. Crews will inspect trenches left open for more than 24 hours for trapped animals. Only a Service-approved biologist will remove trapped animals. To comply with the California red-legged frog injunction for herbicide applications, Western will ensure that, in the counties named in the injunction, there will be no ground application of any of the chemicals named in the injunction (http://www.epa.gov/espp/litstatus/redleg-frog/steps-info.htm) Currently, the no-use buffer is 60 feet from any aquatic feature, aquatic breeding habitat, non-breeding aquatic habitat, and upland habitat. A brief description of the O&M activity, including location and duration, will be sent to Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B059	California tiger salamander *Ambystoma californiense*	FT	A	Follow SOPs and PCM-W001.
			B and C	Follow all measures for category A above. A Service-approved biologist[3] will identify potential California tiger salamander (CTS) breeding habitat and will flag a 500-foot buffer. The following restrictions apply within the buffer: • Vehicles must remain on existing access roads and maintain a speed limit of 15mph; • Only manual vegetation removal is allowed; • Only direct (e.g. injection and cut-stump) herbicide application methods are allowed, except when otherwise restricted; • No ground disturbance (e.g. digging or auguring); and • Erosion-control devices will be of a material that will not entrap amphibians. If it is not possible to follow the above-stated measures, a preactivity survey will be conducted no more than 24 hours before O&M activities begin. A Service-approved biologist will remain on site during all activities to ensure protection of CTSs OR an exclusion barrier will be constructed around the work site, following Service-approved methods and materials, which will be removed at the end of the work activity. Crews will inspect trenches left open for more than 24 hours for trapped animals. Only a Service-approved biologist will remove trapped animals. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B059a			A, B, and C	Critical habitat: Follow PCM-B059. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
PCM-B060	Cascades frog *Rana cascadae*	FSS	A	Follow SOPs.
			B and C	Follow PCM-W002.
PCM-B061	Foothill yellow-legged frog *Rana boylii*	FSS/BLMS	A	Follow SOPs.
			B and C	Follow PCM-W002.
PCM-B062	Oregon spotted frog *Rana pretiosa*	FSS	A	Follow SOPs.
			B and C	Follow PCM-W002.
PCM-B063	Western spadefoot *Spea hammondii*	BLMS	A	Follow SOPs.
			B and C	Follow PCM-W001.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
REPTILES				
PCM-B064	Alameda whipsnake *Masticophis lateralis euryxanthus*	FT	A	Follow SOPs. Vehicles will be restricted to existing access roads and limit speed to 15 mph. Equipment and debris will be placed only in cleared areas where snakes will be readily visible. All activities that will take place on the ground will be conducted during daylight hours to increase chances of sighting in areas where whipsnakes are present.
			B	Follow all measures listed for A above. Shrub removal will be limited in areas of potential habitat; vegetation will be manually cleared and only direct (e.g. injection and cut-stump) herbicide treatment is allowed. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B065	Coast horned lizard *Phrynosoma coronatum frontale*	BLMS	A, B, and C	Off-road travel will be minimized. Vehicle speeds will not exceed 15 mph on access and maintenance roads and 10 mph on unimproved access routes.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B066	Giant garter snake *Thamnophis gigas*	FT/ST	A	Follow SOPs and PCM-W002 in aquatic giant garter snake (GGS) habitat.
			B	Follow PCM-W002 in aquatic GGS habitat, which supersedes those below where they are different. Use of herbicides (with the exception of direct application) within 200 feet of potential giant garter snake habitat will be prohibited at all times. Movement of heavy equipment will be confined to existing roadways to minimize habitat disturbance. Vegetation management will be confined to the minimum area necessary to facilitate O&M activities. GGS aquatic and upland habitats will be flagged as environmentally sensitive areas by a Service-approved biologist within or adjacent to the disturbance footprint. Only manual vegetation removal will be allowed within the flagged area. A Service-approved monitor will be present for O&M activities within the flagged area. Ground-disturbing activities will be avoided within 200 feet from the banks of GGS aquatic habitat. If this is not feasible, O&M activities will be conducted between May 1 and September 30, the giant garter snake active period, and all potentially affected aquatic habitats will be dewatered prior to any ground disturbance. Dewatered areas will remain dry with no puddled water remaining for at least 15 consecutive days prior to excavation or filling of that habitat. If a site can not be completely dewatered, prey items will be netted or otherwise salvaged if present. Any temporary fill and debris will be immediately removed and disturbed areas restored to pre-project conditions prior to October 1. Restoration work could include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel. Filter fences and mesh will be of a material that will not entrap reptiles and amphibians. Erosion-control blankets will be used as a last resort because of their tendency to biodegrade slowly and trap reptiles and amphibians. No monofilament plastics will be used for erosion control near aquatic features. If it is not feasible to conduct O&M activities between May 1 and September 30, Western would initiate consultation with USFWS on that action. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B067	Northern sagebrush lizard *Sceloporus graciosus graciosus*	BLMS	A, B, and C	Off-road travel will be minimized. Vehicle speeds will not exceed 15 mph on access and maintenance roads and 10 mph on unimproved access routes.
PCM-B068	Western pond turtle *Actinemys marmorata*	FSS	A	Follow SOPs and PCM-W002.
			B and C	From April 15 to July 15, any ground-disturbing activity within 400 feet of a permanent pond, lake, creek, river, or slough that could affect the bed, bank, or water quality of any of these features will be prohibited OR a qualified biologist[4] will inspect the project area. If adult or juvenile pond turtles are present, a qualified biologist will monitor project activities to ensure that no turtles are harmed. If a qualified biologist determined that nests could be adversely affected, potential nesting areas will be avoided between June 1 and October 31. Follow PCM-W002.
BIRDS				
PCM-B069	American peregrine falcon *Falco peregrinus* (nesting)	SE/FSS	A	Follow SOPs.
			B and C	From January 1 to July 31 herbicide applications and noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be prohibited in the vicinity of potential peregrine falcon nesting habitat (cliffs) OR a qualified biologist[4] will conduct nesting surveys to verify absence. If a nest is detected, all O&M activities and all herbicide applications will be prohibited at a distance determined by the qualified biologist, based on topography and/or other environmental considerations.
PCM-B070	Bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	SE	A	Follow SOPs.
			B and C	From February 1 to August 15 herbicide application or noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be prohibited anywhere that bald eagles are known to nest OR a qualified biologist[4] will conduct nesting surveys using methods described in Jackman and Jenkins 2004. If a nest is detected, all herbicide application and O&M activities will be prohibited at a distance determined by the qualified biologist, based on topography and/or other environmental considerations.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B071	Bank swallow *Riparia riparia* (nesting)	ST	A	Follow SOPs.
			B and C	From April 1 to August 15 rip-rapping of vertical streambanks greater than 3 feet in height and herbicide application within 150 feet of such habitats will be prohibited OR a qualified biologist[4] will conduct nesting surveys prior to O&M activities that involve modifications to such streambanks. If a nesting colony is detected, a qualified biologist will mark and monitor an appropriate buffer zone within which all O&M activities and herbicide applications will be prohibited from April 1 to August 15. Follow PCM-W002.
PCM-B072	California black rail *Laterallus jamaicensis coturniculus*	ST	A	Follow SOPs and PCM-W002.
			B and C	Because black rails are resident where they occur (i.e., not migratory), herbicide use in potential black rail habitat will be prohibited (with the exception of direct application) all year long unless, under guidance of CDFG, the habitat is determined to be unoccupied. From February 15 to July 31, surface disturbances including noise or changes to the hydrological regime will be prohibited in potential black rail habitat (shallowly flooded wetlands or irrigated pasture) OR a qualified biologist[4] will conduct nesting surveys to verify absence. If nesting activity is detected or likely, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities will be prohibited from February 15 to July 31. Follow PCM-W002.
PCM-B073	California spotted owl *Strix occidentalis occidentalis*	FSS/BLMS	A	Follow SOPs.
			B and C	From April 1 to June 15 herbicide application (with the exception of direct application), tree removal, pruning, topping, and other disturbances will be prohibited in suitable habitat (forest) OR a qualified biologist[4] will conduct nest surveys using methods described in CDFG 1992. If a nest was detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from April 1 to June 15.
PCM-B074	Great gray owl *Strix nebulosa* (nesting)	SE/FSS	A	Follow SOPs.
			B	From March 15 to July 31 herbicide application (with the exception of direct application) and removal of snags or trees will be prohibited OR a qualified biologist[4] will conduct nesting surveys using methods described in Beck & Winter 2000 to verify absence. If a nest was detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from March 15 – July 31.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B074 (cont.)	Great gray owl *Strix nebulosa* (nesting)	SE/FSS	C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B075	Greater sage grouse *Centrocercus urophasianus* (nesting and leks)	FSS/BLMS	A	Follow SOPs.
			B and C	From March 1 to September 31 herbicide application (with the exception of direct application), vegetation clearing, and surface disturbance will be prohibited in sagebrush habitats OR a qualified biologist[4] will conduct surveys for leks and nests to verify absence. If nesting activity or leks are detected or known, a qualified biologist will mark and monitor an appropriate buffer zone around nests or leks within which all O&M activities and herbicide applications will be prohibited from March 1 to September 31.
PCM-B076	Greater sandhill crane *Grus canadensis tabida* (nesting and wintering)	ST/FSS	A	Follow SOPs and PCM-W002.
			B and C	From March 15 to August 31 herbicide application (with the exception of direct application), vegetation clearing, and ground disturbance will be prohibited in marshes, uplands adjacent to marshes, pastures, and meadows OR a qualified biologist[4] will conduct nesting surveys prior to O&M activities. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from March 15 to August 31. Follow PCM-W002.
PCM-B077	Little willow flycatcher *Empidonax traillii brewsteri* (nesting)	SE/FSS	A	Follow SOPs and PCM-W002.
			B and C	From May 15 to August 31 herbicide application (with the exception of direct application) and vegetation clearing will be prohibited in wetlands or thickets of willows and low-growing shrubs OR a qualified biologist[4] will conduct nesting surveys prior to O&M activity using methods described in Bombay et al. 2000. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from May 15 to August 31. Follow PCM-W002.
PCM-B078	Northern goshawk *Accipiter gentilis* (nesting)	FSS/BLMS	A	Follow SOPs.
			B and C	From February 15 to August 15 herbicide application (with the exception of direct application), tree removal, and noisy or disturbing O&M activities (e.g., chain saws, mechanical chippers) will be prohibited OR a qualified biologist[4] will conduct nest surveys using methods described in USDA 2005. If a nest is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from February 15 to August 15.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B079	Northern spotted owl *Strix occidentalis caurina*	FT	A	Follow SOPs. Aerial and ground patrols are permissible year-round. From February 1 to July 31 any noisy O&M activities that require equipment other than hand tools and pickup trucks will be prohibited. If O&M activities need to be conducted between February 1 and July 31, a Service-approved biologist[3] will conduct protocol nest surveys using methods described in CDFG 1992 (or the most current survey protocol) under guidance of US Fish and Wildlife Service. If a nest is detected, the US Fish and Wildlife Service will be contacted for further guidance.
			B	From February 1 to July 31 herbicide application (with the exception of direct application), tree removal, and any noisy or disturbing O&M activities (e.g., chain saw, mechanical chipper) will be prohibited. O&M activities that only require the use of hand tools and pickup trucks are allowable within this time frame. If O&M activities need to be conducted between February 1 and July 31, a Service-approved biologist[3] will conduct protocol nest surveys using methods described in CDFG 1992 (or the most current survey protocol) under guidance of US Fish and Wildlife Service. If a nest is detected, the US Fish and Wildlife Service will be contacted for further guidance. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.
			C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B079a			A, B, and C	Critical habitat: Follow PCM-B079. For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B080	Swainson's hawk *Buteo swainsoni* (nesting)	ST/FSS	A, B, and C	From April 1 to July 31 herbicide application and tree removal will be prohibited. A 0.25-mile buffer zone will be established and maintained around potential Swainson's hawk nest trees, within which there will be no intensive disturbance (e.g., use of heavy equipment, power saws, chippers, cranes, or draglines). This buffer may be adjusted, as assessed by a qualified biologist[4], based on changes in sensitivity exhibited by birds over the course of the nesting season and the type of O&M activity performed (e.g., high noise or human activity such as mechanical vegetation maintenance versus low noise or human activity such as semi-annual patrols). Within 0.25 mile of an active nest (as confirmed by a qualified biologist), routine O&M activities will be deferred until after the young have fledged or until it was determined by a qualified biologist that the activities will not adversely affect adults or young OR a qualified biologist will conduct nest surveys using methods described in SHTAC 2000 (or the most recent survey protocol) to determine absence.
PCM-B081	Tricolored blackbird *Agelaius tricolor* (nesting colony)	BLMS	A	Follow SOPs.
			B and C	From March 15 to August 15 herbicide application (with the exception of direct application) and vegetation clearing/disturbance will be prohibited in marshes, willows, and blackberry thickets OR a qualified biologist[4] will conduct a nesting survey prior to O&M activities. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nesting colony within which all O&M activities and herbicide applications will be prohibited from March 15 to August 15. Follow PCM-W002.
PCM-B082	Western burrowing owl *Athene cunicularia* (burrow sites winter and summer)	SSC/BLMS	A	Follow SOPs.
			B and C	From February 1 to August 31 herbicide application (with the exception of direct application) and other O&M activity will be prohibited within 250 feet of potential burrowing owl nesting dens (ground squirrel burrows, culverts, concrete slabs, debris piles that could support nesting burrowing owls). From September 1 through January 31, disturbance will be prohibited within 160 feet of potential burrowing owl dens. OR a qualified biologist[4] will conduct nesting and wintering surveys using methods described in California Burrowing Owl Consortium 1993. If nesting or wintering activity is detected, a qualified biologist will mark and monitor an appropriate non-disturbance buffer in the vicinity of burrows that have been active within the last three years. Within the buffer zone, all O&M activities and herbicide applications will be prohibited from February 1 to August 31.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B083	Western yellow-billed cuckoo *Coccyzus americanus occidentalis* (nesting)	SE/FSS	A	Follow SOPs and PCM-W002.
			B and C	Follow PCM-W002. From March 15 to September 31 herbicide application (with the exception of direct application) or tree/vegetation disturbance will be prohibited in riparian forest OR a qualified biologist[4] will conduct nest surveys. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities and herbicide applications will be prohibited from March 15 to September 31.
MAMMALS				
PCM-B084	American marten *Martes americana sierra*	FSS	A, B, and C	Between March 1 and August 31, off-road vehicle travel will be avoided. If off-road travel or ground disturbance is required in potential marten habitat at any time of year, disturbance to downfall, snags, downed trees/logs, and stumps will be avoided. Snags, downfall, and stumps will never be moved or removed unless they are a specific safety concern.
PCM-B085	California wolverine *Gulo gulo luteus*	ST/FSS	A, B, and C	Between January 1 and August 31, off-road vehicle travel and activity will be avoided. If off-road travel or ground disturbance is required in potential wolverine habitat, a qualified biologist[4] will determine the presence or absence of wolverines.
PCM-B086	Fringed myotis *Myotis thysanodes*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mine tunnels, and rock outcrops. Snags and live trees will be left standing to the maximum extent possible.
PCM-B087	Greater western mastiff bat *Eumops perotis californicus*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of significant rock outcrops.
PCM-B088	Long-eared myotis *Myotis evotis*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mine tunnels, and rock outcrops. Snags and live trees will be left standing to the maximum extent possible.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B089	Pacific fisher *Martes pennanti*	FSS/BLMS	A, B, and C	Between February 1 and August 1, off-road vehicle travel and activity will be avoided If off-road travel or ground disturbance is required in potential fisher habitat at any time of year, disturbance to downfall, snags, downed trees/logs, and stumps will be minimized. Snags, downfall, and stumps will never be moved or removed unless they are a specific safety concern.
PCM-B090	Pallid bat *Antrozous pallidus*	FSS/BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mine tunnels, and rock outcrops. Snags and live trees will be left standing to the maximum extent possible.
PCM-B091	Pygmy rabbit *Brachylagus idahoensis*	BLMS	A	Follow SOPs.
			B and C	Off-road travel will be prohibited in pygmy rabbit habitat. Where off-road travel or activities is required, trampling or driving over sagebrush and other shrubs of any size will be prohibited.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B092	San Joaquin kit fox *Vulpes macrotis mutica*	FE/ST	A	Follow SOPs
			B	O&M activities will be avoided between Interstate 580 and the Tesla Substation from February 1 through May 31, the kit fox breeding season. Prior to O&M activities that involve ground disturbance, a qualified biologist[4] will survey the proposed disturbance footprint and all areas within 250 feet of the proposed activity for potential kit fox den sites. Survey methods and protection measures will be consistent with those described in USFWS 1999b and USFWS 1999c or by other more current methods approved by the USFWS. The status of all dens will be determined and mapped; results will be submitted to USFWS within 5 working days after survey completion and before start of ground disturbance. All potential den sites outside the disturbance footprint will be conspicuously marked with stakes and flagging 30 days prior to ground-disturbing activities using materials that do not prevent access by kit foxes. Circular exclusion zones will be established around kit fox dens, and will have a radius measured outward from the entrance or cluster of entrances of 50 feet for potential dens, 100 feet for known dens; the distance for natal or pupping dens will be determined in coordination with USFWS and CDFG. No ground-disturbing activities will be permitted within exclusion zones. If destruction of a potential or known den is unavoidable within the disturbance footprint, the den site will be monitored by a Service-approved biologist[3] for a period of at least three days prior to disturbance. Unoccupied dens could be blocked with a sand bag or hand excavated to prevent occupation until O&M activities are completed. Procedures for monitoring and excavating will be consistent with those described in USFWS 1999c. If the den is occupied, Western would initiate consultation with USFWS for that project. O&M activities will take place only between one hour after sunrise and one hour before sunset except when emergencies necessitate night work. If nighttime construction is required, lights will be directed to the minimum area needed to illuminate project work areas. All trash, especially food-related trash, will be deposited into closed containers and removed on a daily basis. Excavations greater than three feet deep will be fenced, covered, or filled at the end of each working day, or will have escape ramps provided to prevent the entrapment of foxes. Pipes will be capped at all times until they are used. Any mortalities or injuries to kit foxes that occur as a result of project-related or O&M-related actions will be reported to the Western Natural Resources Department, who will report the incident to the USFWS. A description of the O&M activity, including location and duration, will be kept on file at Western's Natural Resources Department in support of USFWS reporting requirements.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B092 (cont.)	San Joaquin kit fox *Vulpes macrotis mutica*	FE/ST	C	Follow all measures listed for A and B above. Prior to site mobilization, Western will provide notification of the O&M activity to the appropriate Federal land manager, land owner, or agency.
PCM-B093	San Joaquin pocket mouse *Perognathus inornatus inornatus*	BLMS	A, B, and C	Off-road travel and activity will be avoided to the maximum extent possible.
PCM-B094	Sierra Nevada red fox *Vulpes vulpes necator*	ST/FSS	A	Follow SOPs.
			B and C	From March 1 through August 31, any off-road travel and activity, noise-generating equipment use, vegetation removal, herbicide use, or ground-disturbing activities will be avoided. If this is not feasible, a pre-activity survey by a qualified biologist[4] will be conducted to determine whether pupping dens are present. Activities within 500 feet of pupping dens will be avoided between March 1 and August 31. If this is not feasible, Western will coordinate with CDFG.
PCM-B095	Spotted bat *Euderma maculatum*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of cliffs and rock outcrops.
PCM-B096	Townsend's big-eared bat *Corynorhinus townsendii*	FSS/BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mines, and tunnels.
PCM-B097	Western red bat *Lasiurus blossevillii*	FSS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of broadleaf woodlands in riparian areas. Live broadleaf trees will be left standing to the maximum extent possible.

PCM-ID	Species Name	Status[1]	Activity Category	PCM
PCM-B098	Western small-footed myotis *Myotis ciliolabrum*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mine tunnels, and rock outcrops. Snags and live trees will be left standing to the maximum extent possible.
PCM-B099	Yuma myotis *Myotis yumanensis*	BLMS	A	Follow SOPs.
			B and C	Noisy or disturbing O&M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of caves, mine tunnels, and rock outcrops. Snags and live trees will be left standing to the maximum extent possible.

[1] Status codes: BLMS= BLM sensitive, FE = Federally endangered, FSS= Forest Service sensitive, FT = Federally threatened, SE = state endangered, SSC = state species of special concern, ST = state threatened

[2] Qualified personnel are those who are capable of consistently and accurately identifying the subject resource and have been approved by Western's Natural Resource Department.

[3] A Service-approved biologist is one whose resume has been submitted to and who has been formally approved by the US Fish and Wildlife Service. This biologist's resume reflects a high level of experience with the Federally listed species covered by a particular PCM.

[4] A qualified biologist is one who has previous experience with the species covered by a particular PCM and who understands the habitat requirements of the species such that he/she can make a well-informed decision about potential presence, potential project-related impacts, and appropriate avoidance/minimization measures.

Table 6-3 Water Resources/Aquatic Habitat Project Conservation Measures

PCM-ID	Activity Category	PCM
VERNAL POOLS, VERNAL POOL GRASSLANDS, AND SEASONAL WETLANDS		
PCM-W001	A	Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction, and after annual plants have set seed (generally June 1 to September 30, or as determined by qualified personnel based on personal observation of the soils). For patrolling the ROW off of established roads in a pickup truck, or for inspecting hardware on structures with a bucket truck, vernal pools, vernal pool grasslands, and seasonal wetlands will be avoided by 50 feet during the wet season. No avoidance will be necessary if soils are completely dry (generally June 1 to September 30).
	B and C	Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction, and after annual plants have set seed (generally June 1 to September 30, or as determined by a qualified biologist based on personal observation of the soils). If vegetation-management activities are proposed within 250 feet of a vernal pool, vernal pool grassland, or seasonal wetland, a qualified biologist will be present at all times to ensure the protection of the work-area limits below OR qualified personnel will clearly fence the limits of the work area, according to limits presented in the following, prior to the maintenance activity. (The herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different.) • Mixing or application of pesticides, herbicides, or other potentially toxic chemicals will be prohibited. • Herbicide application to target vegetation by direct application methods (e.g. injection or cut-stump treatment) will be prohibited within 50 feet in the wet season (generally October 1 to May 31) and allowed up to the edge of the pool or seasonal wetland in the dry season (generally June 1 to September 30). • Herbicide application by basal spray and foliage spray methods will be prohibited within 100 feet in any season. • Manual clearing of vegetation (chainsaw, axe, clippers) will be allowed up to the edge of the pool or seasonal wetland in the wet season (generally October 1 to May 31); a buffer will not be necessary in the dry season (generally June 1 to September 30). • Mechanical clearing of vegetation (heavy-duty mowers, crawler tractors, or chippers) will be prohibited within 100 feet in the wet season (generally October 1 to May 31); a buffer will not necessary in the dry season (generally June 1 to September 30). All equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from any vernal pool, vernal pool grassland, or seasonal wetland, and no closer than 200 feet unless a bermed (no ground disturbance) and lined refueling area is constructed and hazardous-material absorbent pads are available in the event of a spill. Vehicles will be inspected daily for fluid leaks before leaving the staging area. When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas. For ground-disturbing activities, a 100-foot (wet season) or 50-foot (dry season) buffer zone from the edge of the vernal pool or wetland will be maintained and the vernal pool or wetland will be protected from siltation and contaminant run-off by use of erosion control. Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap reptiles and amphibians (e.g., coconut coir matting). No monofilament plastics will be used for erosion control near vernal pools and seasonal wetlands. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. All fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed.

PCM-ID	Activity Category	PCM
PCM-W001 (cont.)	B and C	For ground-disturbing activities, such as installation or repair of underground components (water, power, communication, or ground electrical line) or soil borings, a 250-foot buffer zone will be maintained.
PCM-W001a	A, B, and C	Follow PCM-W001.

PCM-ID	Activity Category	PCM
SEEP, SPRING, POND, LAKE, RIVER, STREAM, AND MARSH		
PCM-W002	A	The following activities will be prohibited at all times within 100 feet of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats: • vehicle access, except on existing access and maintenance roads • dumping, stockpiling, or burying of any material • mixing of pesticides, herbicides, or other potentially toxic chemicals • open petroleum products All equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from any seep, spring, pond, lake, river, stream, marsh, or their associated habitats. Vehicles will be inspected daily for fluid leaks before leaving the staging area. When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas.
	B and C	The following activities will be prohibited at all times within 100 feet of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats: • vehicle access, except on existing access and maintenance roads • dumping, stockpiling, or burying of any material, except as required for specific O&M activities (e.g., rip-rap) • mixing of pesticides, herbicides, or other potentially toxic chemicals • open petroleum products Equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from any seep, spring, pond, lake, river, stream, marsh, or their associated habitats. Vehicles will be inspected daily for fluid leaks before leaving the staging area. When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas. For vegetation management or maintenance within 100 feet of any seep, spring, pond, lake, river, stream, or marsh, or any of their associated habitats, the following work-area limits will be provided (the herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different): • Only manual-clearing of vegetation will be permitted • Basal and foliar application of herbicides will be prohibited. Only direct application treatments (e.g. injection and cut-stump) of target vegetation will be allowed using herbicide approved for aquatic use by the U.S. EPA and in coordination with the appropriate federal land manager. All instream work, such as culvert replacement or installation, bank recontouring, or placement of bank protection below the high-water line, will be conducted during no-flow or low-flow conditions and in a manner to avoid impacts to water flow, and will be restricted to the minimum area necessary for completion of the work. All equipment used below the ordinary high-water mark will be free of exterior contamination. For ground-disturbing activities, a 100-foot buffer zone will be maintained from the edge of the seep, spring, pond, lake, river, stream,

PCM-ID	Activity Category	PCM
PCM-W002 (cont.)	B and C (cont.)	marsh, or their associated habitats for protection from siltation and run-off of contaminants by use of erosion-control measures. Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap reptiles and amphibians (e.g., coconut coir matting). No monofilament plastics will be used for erosion control near vernal pools and seasonal wetlands. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. All fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed. Seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species. Western will obtain appropriate 404 discharge and 401 water-quality permits prior to any maintenance activities that must take place within jurisdictional wetlands or other waters of the US. These will be coordinated with USACE and RWQCB as needed. Dewatering work for maintenance operations adjacent to or encroaching on seeps, springs, ponds, lakes, rivers, streams, or marshes will be conducted to prevent muddy water and eroded materials from entering the water or marsh. All stream crossings will be constructed such that they permit fish to pass and reduce the potential for stream flows to result in increased scour, washout, or disruption of water flow. Wherever possible, stream crossings will be located in stream segments without riparian vegetation, and structure footings will be installed outside of stream banks. Should Western need to modify existing access roads or install new access roads, they will be built at right angles to streams and washes to the extent practicable. Trees providing shade to water bodies will be trimmed only to the extent necessary and will not be removed unless they present a specific safety concern. Trees that must be removed will be felled to avoid damaging riparian habitat. They will be felled out of and away from the stream maintenance zone and riparian habitat, including springs, seeps, bogs, and any other wet or saturated areas. Trees will not be felled into streams in a way that will obstruct or impair the flow of water, unless instructed otherwise. Tree removal that could cause stream-bank erosion or result in increased water temperatures will not be conducted in and around streams. Tree removal in riparian or wetland areas will be done only by manual methods.

Table 6-4 Cultural Resources Project Conservation Measures

PCM-ID	Activity Category	Description
Surveyed Areas (Resource Present) – PCMs		
PCM-C001	A	Avoid driving vehicles or equipment over archeological sites. If infeasible, only vehicles with rubberized tires/treads are allowed within sites; no skidding or steel-tracked equipment.
		Stage vehicles and equipment outside of cultural resource sites.
		Only the following activities are allowed in cultural sites: manual clearing of vegetation, and chip/broadcast disposal of cut vegetation.
	B and C	Cultural resource sites that are located within an area where ground-disturbing activity will take place shall be flagged for avoidance and ground-disturbing activities shall avoid all cultural resource sites. Sites that cannot be avoided will require further consultation with SHPO prior to any ground-disturbing activity.
		Use of petroleum-based herbicides is prohibited in cultural sites.
		A Western-approved archeological monitor may be required during ground disturbing activities. Contact Western's Natural Resource Department.
PCM-ID	Activity Category	Description
Not Protocol Surveyed Areas and Not Surveyed Areas – PCMs		
PCM-C002	A	Instruct crews to pay particular attention for the presence or discovery of cultural materials in areas where protocol-level surveys were not previously conducted.
		Upon discovery of potential buried cultural materials, work within 50 feet of the find will be halted and the discovery will be reported immediately to the Western Natural Resources Department or other designated point of contact. Western will comply with provisions in the National Historic Preservation Act and consult with the California State Historic Preservation Officer to determine measures to avoid the resource or mitigate during maintenance activities.
		If cultural resources are discovered, provisions in PCM-C001 shall be followed.
	B	Follow all measures listed for A above.
		A Western-approved archeological monitor may be required during ground-disturbing activities. Contact Western's Natural Resource Department.

PCM-ID	Activity Category	Description
PCM-C002 (cont.)	B (cont.)	Mastication activities shall adhere to the following BMPs: • Western will require mastication operators to prevent blading devices from removing vegetation at ground level to avoid soil disturbance. All mowed vegetation shall not be cut below 6 inches. • Mastication equipment will not be used within areas recently subjected to heavy rains in order to prevent rutting in wet soils from equipment tires. • A qualified archaeologist will be on site during mastication activities to monitor survey areas being cleared of vegetation. Should any cultural resources be detected, mastication activities will cease in the area until an assessment and the significance of the find is made. Results of the monitoring and survey activities will be provided in the annual report.
	C	Follow measures listed for A and B above. A Western-approved archeological monitor may be required. Contact Western's Natural Resource Department.

7. GIS DATABASE

Western has developed the North Area O&M Program using a detailed GIS database. Detailed information regarding all sensitive resources was captured in the field and brought into a user-friendly GIS system that Western, TANC, and USFS personnel can use to manage the O&M activities within the USFS boundary. Western has coordinated with USFS in developing this database, which will greatly enhance Western's and USFS's capabilities in processing proposed maintenance activities in a timely manner.

All information needed to process a proposed maintenance activity is included in the GIS database. Western captured all infrastructure (i.e., towers, transmission lines, and access roads) in the ROW using GPS units; defined the North Area ROWs with polygons; obtained aerial orthophotography and conducted videography of the ROW; and took still photos of transmission line corridors. All data have a spatial accuracy of less than 5 meters horizontal resolution. USFS can access all of these data using ArcGIS or ArcView. The final GIS database includes specific locations for:

- gates;
- crossing lines – other transmission lines, pipes crossing the ROW, fences;
- crossing points – culverts, low water, etc.;
- cultural isolates;
- cultural diagnostic artifacts;
- cultural lines;
- cultural sites;
- cultural surveys – where protocol/non-protocol surveys were conducted;
- species points and polygons;
- elderberry points and polygons; and
- habitat points, lines, and polygons.

Western has also provided datasets that can easily be reviewed by USFS:

- **Category A, B, C –** ROW span and access road polygons color-coded green, yellow, or red based on maintenance activity category and sensitive-resource presence within each span or access road polygon. This dataset will be useful in quickly identifying the critical issues associated with each span and maintenance activity;
- **Sensitive Resource Lookup Table –** a table that lists all potential and observed occurrences of sensitive resources for each ROW span, access road, habitat polygon.

7.1 GIS Data on DVD/External Drive:

Western will provide USFS with a DVD/External Drive with all files for the North Area O&M Program. USFS's DVD/External Drive will include the following information:

- All GIS data listed above in shapefile format;
- Western's infrastructure data: transmission lines, ROW, access roads, structures, facilities, federal lands, various boundaries, street data;
- Aerial Ortho Imagery (MrSID or TIFF format) and image catalog;
- Aerial videos and tower photos;
- North Area EA MXD file to be used with ArcGIS;
- LinearVision Viewer 2.4.55 to view videos; and
- Readme.txt file.

7.2 GIS Data Accessibility

The GIS data will be accessed by Western resource staff, Western field crews, and USFS personnel. The following bullets describe the data accessibility for each team member:

- Western's office staff will access GIS data and PCM information through the intranet ArcIMS site. Category A, B, C, and habitat layers are turned on through the table of contents list and each span or habitat is then identified for a list of resources and PCMs;
- Western's field staff will access GIS data and PCM information through the ArcPad field GIS application installed on field laptops. Category A, B, C, and sensitive-resource layers are turned on through the icon buttons at the top of the viewing window. ArcPad does not list sensitive resources and PCMs per span or habitat;
- Cooperating agencies will access GIS data and PCM information through the North Area EA MXD file for ArcGIS. A 9.2 version of ArcGIS ArcView is recommended. Category A, B, C, and sensitive-resource layers are turned on through the table of contents list and each span or habitat is then identified for a list of resources and PCMs.

7.3 GIS Definitions

Definitions for various GIS terms and acronyms are as follows:

- **ArcGIS ArcView** – a GIS application developed by Environmental Systems Research Institute (ESRI) in Redlands, CA.

- **ArcIMS** – internet mapping service application: a web application that serves up GIS capability developed by ESRI.
- **ArcPad** – a simple field GIS application developed by ESRI.
- **GIS** – geographic information system: allows access of spatial data through a graphic window or through a table. Each spatial feature (point, line, polygon) has a true-world location and has an associated attribute in a table.
- **GPS** – global positioning system: a system of satellites that allow field users to collect data precisely to the feature's true-world location.
- **MrSID** – compressed 20:1 aerial imagery file type using Lizardtech GeoExpress software.
- **MXD** – a project file to view GIS data in an ArcGIS ArcView application.
- **Shapefile** – a simple geographic file of point, line, or polygon with an associated table represented as a graphic in a GIS application.

8. REFERENCES

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Appendix A

Clearance Requirements

APPENDIX A CLEARANCE REQUIREMENTS

Western Area Power Administration
Clearance Requirements for Transmission Line Circuits
White Paper

1. INTRODUCTION

This white paper provides a description of the regulations and guidance pertinent to the management of vegetation as it relates to the reliability of electric transmission systems. As described in the following sections, a variety of clearance standards is used throughout the industry.

According to a 2004 Federal Energy Regulatory Commission (FERC) report[1], the vast majority of transmission owners follow the National Electrical Safety Code (NESC) rules or American National Standards Institute (ANSI) guidelines, or both, when managing vegetation around transmission-system equipment. The NESC deals with electric safety rules, including transmission wire clearance standards, whereas the applicable ANSI code deals with the practice of pruning and removal of vegetation. In developing an effective, compliant, and environmentally responsible vegetation management approach, Western Area Power Administration (Western) has taken into consideration the regulations and guidance described within this white paper.

2. KEY STANDARDS RELATING TO ELECTRIC SYSTEM RELIABILITY AND SAFETY

The following standards, guidelines, rules, and regulations identify requirements and suggested practices for vegetation management in transmission line corridors.

2.1 National Electric Safety Code 1977, 2006

The NESC is the national code covering a variety of basic provisions regarding electric supply stations, overhead and underground electric supply and communication lines. It contains work rules for construction, maintenance, and operation of electric supply and communication lines and equipment.

NESC Rule 218 generally requires that "trees that interfere with ungrounded supply conductors should be trimmed or removed." Additionally, the rule is generally interpreted to require utilities to perform a "reasonable" amount of utility vegetation management (UVM) work. It does not specify cycles, clearances, program

[1] Utility Vegetation Management and Bulk Electric Reliability Report from the Federal Energy Regulatory Commission, September 7, 2004. http://www.ferc.gov/industries/electric/indus-act/reliability/veg-mgmt-rpt-final.pdf

requirements, performance objectives, or any other type of requirement that would result in meeting specific UVM objectives.

Rule 218 was revised in 2006 to note that utility experience is a key issue in developing clearance standards. Both the frequency of pruning and the distance by which vegetation is pruned back from the lines are affected by the line voltage class, the relative growth rates, and the failure characteristics of relevant plant species, right-of-way limitations, location of the vegetation relative to the conductors, potential movement of conductors and vegetation during routine winds, and the sag of conductors due to elevated temperatures or ice loadings.

NESC Rule 232, 233, and 234 prescribe clearances of wires from ground, structures, and other installations but provide no specific information with respect to clearances to vegetation. Rule 217A4 requires supporting structures to be kept free from climbing hazards, such as vines. However, no further specificity is provided.

2.2 American National Standards Institute

ANSI Z133.1 *Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush – Safety Requirements* is the industry safety standard for working on vegetation in proximity to energized electrical apparatus. Table 2-1 provides the minimum approach distances from energized conductors for qualified line-clearance arborists. Table 2-2 provides the recommended distance from energized conductors for persons other than a qualified line-clearance arborist.

Table 2-1 Minimum Approach Distances from Energized Conductors for Qualified Line-Clearance Arborists

Nominal Voltage kV phase-to-phase	Distance (feet) Sea Level to 5,000 ft	Distance (feet) 5,001 to 10,000 ft
230.0 – 242.0	8	9
500.0	19	21

Source: ANSI Z133.1 Revision – October 2000

Table 2-2 Minimum Approach Distances from Energized Conductors for Persons Other than a Qualified Line-Clearance Arborists

Nominal Voltage kV phase-to-phase	Distance (feet)
230.0 – 242.0	16
500.0	26

Source: ANSI Z133.1 Revision – October 2000

2.3 North American Electric Reliability Council Standards

NERC is a nonprofit corporation whose members are ten regional reliability councils. NERC's function is to maintain and improve the reliability of the North American integrated electric transmission system, including preventing outages from vegetation located in transmission ROWs, minimizing outages from vegetation located adjacent to ROWs, and maintaining clearances between transmission lines and vegetation on and along transmission ROWs. As a result of the recommendations following the August 14, 2003 blackouts on the East Coast, NERC was charged with developing a vegetation management standard that would be applicable to all utilities and that would provide greater specificity than the NESC and ANSI standards.

Standard FAC-003-1, Transmission Vegetation Management Program, became effective April 7, 2006 and mandatory for all utilities, pursuant to Section 1211 of the Energy Policy Act of 2005. This standard applies to all transmission lines operated at 200 kV and above and to any lower-voltage lines considered critical to the reliability of the electric system in the region. The transmission owner must prepare, and keep current, a formal transmission vegetation management program (TVMP). The TVMP must identify and document clearances between vegetation and overhead, ungrounded supply conductors, taking into consideration transmission line voltage, the effects of ambient temperatures on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway. Minimum clearance distances shall be no less than those set forth in IEEE Standard 516-2003. Western's North Area transmission lines are 230 kV and 500 kV. As such, Western must demonstrate compliance with Standard FAC-003-1 and is in the process of developing a TVMP. As described in section 2.6, Western is developing Clearance 1 and Clearance 2 standards based on IEEE Standard 516-200 and OSHA Standard 1910.333 (c)(3)(i).

Clearance 1 requirements are defined as the appropriate clearance distances to be achieved at the time of transmission vegetation management. Clearance 2 requirements are the specific radial clearances to be maintained between the vegetation and conductors under all rated electrical operating conditions.

2.4 Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2003

The Institute of Electrical and Electronics Engineers (IEEE) is a leading authority in setting standards for the electric power industry. Standard 516-2003, Guide for Maintenance Methods on Energized Power Lines, provides minimum vegetation-to-conductor clearances to maintain electrical integrity (see Table 2-3).

Table 2-3 IEEE Standard 516-2003: Minimum Vegetation-to-Conductor Distances

Voltage (kV)	Distance (ft)	Distance (m)
500	19	5.7
230	13	3.9

2.5 California Public Resource Code

Western also recognizes the California Public Resource Code (PRC) requirements associated with transmission-system safety issues.

Section 4292 - Power Line Hazard Reduction

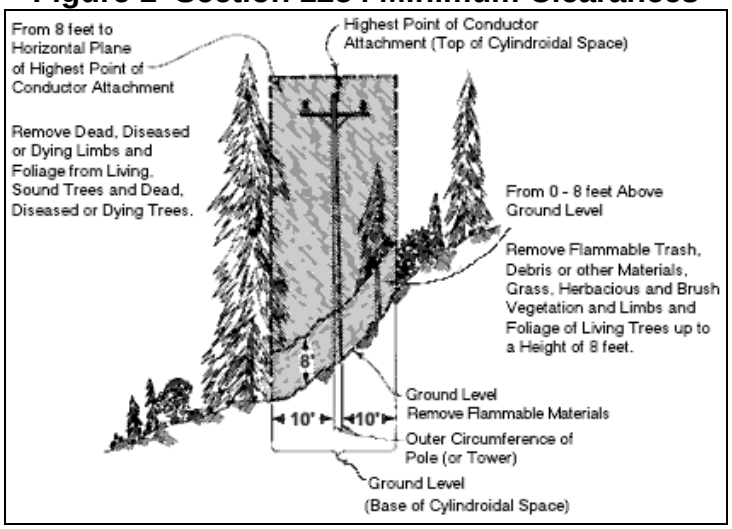
According to PRC Section 4292, Western shall coordinate with land managers to prevent fires caused by electric transmission-system equipment. Also, minimum clearing distances surrounding transmission support structures are specified. As stated in Section 4292:

> Except as otherwise provided in Section 4296, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower.

Section 1254

The following is a graphical representation of Section 1254 showing the minimum clearances required around a utility pole.

Figure 1 Section 1254 Minimum Clearances



The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or

lightning arrester is attached and surrounding each deadend or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of 14, CCR, 1255 or PRC 4296. The radius of the cylindroid is 3.1 m (10 feet) measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

- At ground level - remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will propagate fire.
- From 0 - 2.4 m (0-8 feet) above ground level remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).
- From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Section 4293 - Line Clearance Guidelines

Section 4293 provides minimum distances of vegetation clearance from electrical conductor. As specified below, 10 feet in all directions between vegetation and transmission lines would apply to the transmission lines within the North Area Project.

> Except as otherwise provided in Sections 4294 to 4296, inclusive, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such areas, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> (a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, 4 feet.
>
> (b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, 6 feet.
>
> (c) For any line which is operating at 110,000 or more volts, 10 feet.
>
> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees,

old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard. The director or the agency which has primary responsibility for the fire protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

2.6 Western Requirements

Effective March 18, 2008, WAPA Orders 430.1 and 450.3A establish guidance and organizational support for the maintenance and safe operation of Western Area Power Administration right-of-way (see Table 2-4). Responsibility for vegetation management and control belongs to Western, but functions are restricted based upon land and resource plans that dictate tree removal or trimming criteria within and adjacent to the ROW. Under this general guidance, vegetation management and control pertains to trees with the immediate potential to fall into transmission-system equipment (hazard trees).

The following table provides criteria for tree removal or trimming, as provided by the 2007 Power System Safety Manual (PSSM), Appendix B, Table B-1. The purpose of the PSSM is to provide direction and guidance necessary so that Western employees can perform work without injury or occupational illness, and to prevent accidents which result in personal injury, illness, property damage, or electrical system interruptions.

As described in section 2.3, Western is in the process of drafting a TVMP order to address NERC's FAC-003-1 clearance requirements. Table 2-4 provides clearance requirements based on information in NERC's FAC-003-1.

Table 2-4 Transmission Line ROW Clearing Requirements

Line Voltage (kV)	General ROW Width (feet)	Clearance 1 Requirements[a] Also WAPA O 430.1	Clearance 2 Requirements[b]
69	75	20 feet	3.3 feet
115	80	21 inches	3.2 inches
230	125 – 150	23 feet	5.3 feet
500	200	29 feet	11.3 feet

Notes: (a) Clearance 1 requirements are from WAPA Orders 430.1 and 450.3A. (b) Clearance 2 requirements are from Western's Power System Safety Manual, Appendix A, Table A-1.

2.7 Utility Vegetation Management and Bulk Electric Reliability Report, Federal Energy Regulatory Commission, Sept. 7, 2004

A CN Utility Consulting Vegetation Management Report[2] prepared on behalf of the FERC identified a number of preferred utility vegetation-management practices, including the following:

- Application of wire zone/ border zone concepts (Figure 2)
- Proper consideration of line sag and sway
- Frequent field inspection of vegetation conditions
- Comprehensive public education programs

The wire zone/border zone approach is considered both environmentally responsible and effective in ensuring reliability. This method involves creating a low-growing vegetation environment directly under transmission lines, which physically prevents dangerous vegetation from encroaching into energized transmission facilities. As a general rule, the higher the voltage, the more sensitive the line will be to tree-related faults. Therefore, higher-voltage transmission lines are typically located higher above the ground in comparison to lower-voltage lines to provide adequate distance from vegetation.

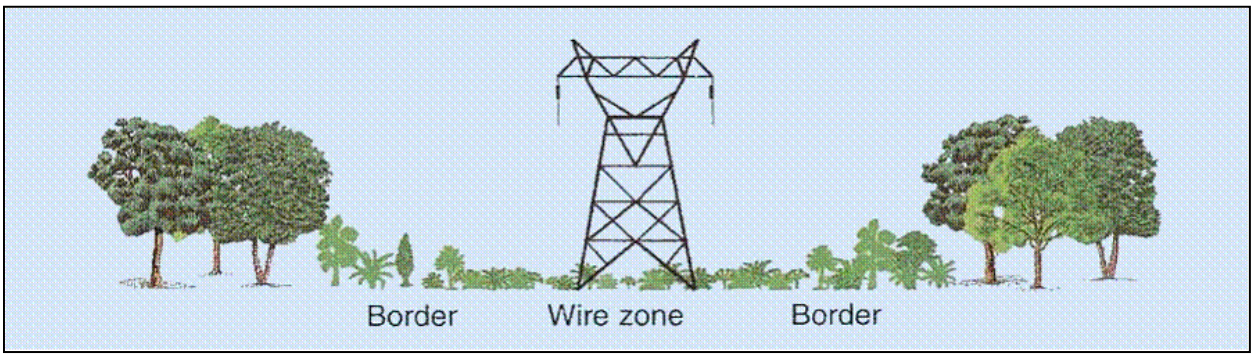
The report states that the wire zone/border zone has "been proven to be effective in reducing and/or eliminating outages related to vegetation on transmission ROW." Additional benefits include reduced long-term maintenance costs, improved habitat for wildlife, biodiversity, and wildland fire mitigation.

Best management practices identified include the following:

- The ROW width should be determined based on the following objective: "No vegetation, or parts of vegetation, shall be allowed to grow or fall into the transmission facilities."
- All transmission UVM work should be identified, scheduled, completed and maintained consistent with wire zone/border zone objectives and industry-accepted protocols.
- Conductor sag and sway must be considered whenever managing transmission ROWs.

[2] CN Utility Consulting, Utility Vegetation Management Final Report, (March 2004) (CNUC Final Vegetation Report). http://www.cnutility.com/images/uvm_final_report.pdf

Figure 2 Wire Zone/Border Zone



2.8 Memorandum of Understanding (MOU) Among the Edison Electric Institute and the U.S. Department of Agriculture (Forest Service), the U.S. Department of Interior (Bureau of Land Management, Fish and Wildlife Service, National Park Service) and the U.S. Environmental Protection Agency.

This MOU was created to enable Federal agencies and utilities to streamline and expedite the management of vegetation near utility facilities, including facilities on Federal lands. The purpose of the MOU is to establish a framework for developing cooperative rights-of-way integrated vegetation management (IVM) practices among the parties to the MOU. The MOU does not impose any binding obligations on any person. The National Park Service, Bureau of Land Management, and Forest Service are a signatory to the MOU, indicating that some level of cooperation with utilities is expected in the management of vegetation near utility lines.

3. CONCLUSIONS

There are many standards, guidelines, and rules that relate to vegetation management; only a handful actually apply to Western as a federal agency, but the provisions of all may be useful in any decision-making and planning undertaken by Western. As presented in this brief white paper, a majority of the clearance requirements are similar to protect public and worker safety, as well as to increase reliability of the system.

As directed by NERC Standard FAC-003-1, Clearance 2 standards must be as restrictive as IEEE Standard 516-200. In addition, Clearance 1 standards must be more restrictive than Clearance 2 standards. Western is using IEEE Standard 516-600 as the basis for developing Clearance 2 standards. Clearance 1 standards are based on Western's Power System Safety Manual, Appendix A, Table A-1.

Appendix B

Herbicide Information

APPENDIX B HERBICIDE APPLICATION

This section describes Western's approach to using herbicides to control vegetation along the North Area ROWs. The approach is based on Western's 2007 Integrated Vegetation Management Guidance (IVM) document and related operations and maintenance (O&M) activities planned for the North Area. Western has developed specific requirements for herbicide use on National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Land Management (BLM), and private lands. Section 1 outlines Western's overall approach to herbicide use for vegetation management. Section 2 summarizes Western's negotiated approach for herbicide use on NPS, USFS, and BLM lands.

1. Western IVM Herbicide Procedures

Historically, Western's vegetation management activities have been restricted primarily to the control of vegetation that will pose a fire or safety hazard to transmission facilities. However, the IVM expands the vegetation-management activities to include the control of noxious or undesirable weeds and to promote low-growing plant communities within the ROW.

Western considered several factors when selecting the appropriate, effective, and safe herbicide for IVM. It is generally desirable to select an herbicide that has low toxicity, will not move from its target or leach into groundwater (low water solubility), and will not remain in the environment for a long period of time (low persistence). Western uses several different ways to apply herbicides. The method selected depends on the type of control needed, the type of vegetation, and the site situation (site conditions and locations). Some of the methods that Western utilizes are stump treatment, basal spray/treatment, foliage spray/treatment, soil treatment (preemergence), and under-surfacing materials treatment.

Sections 7 and 8 of the 2007 IVM provide a wealth of information on herbicide formulation, herbicide application, pre-application procedures, safety precautions, record keeping, and clean up. Table B-1 provides the list of herbicides Western plans to use on NPS, BLM, USFS, and private lands. Section 5 provides a list of standard operating procedures that Western will follow in applying herbicide. For example, PH-SOP-5 requires that all herbicide applicators will have received training and be licensed in appropriate application categories.

2. Western's Approach to Herbicide in NPS, USFS, & BLM

Western has been proactive in collaborating with the NPS, USFS, and BLM in order to understand their concerns with herbicide use on Federal lands. As such, Western has conducted several meetings with the respective agencies to discuss their concerns, especially the use of herbicides. Understandably, the use of herbicides is an important topic of concern. Western has recognized this extremely important issue and has taken initiative to learn more about the use of herbicides on Federal lands. Western has even attended herbicide training with David Bakke, Pesticide-Use Specialist and Invasive

Plants Coordinator State and Private Forestry, of the USFS. The training took place in Sacramento, CA on March 14-16, 2007. This training provided guidance on herbicide use and the associated human and ecological risks.

Western is responsible for the development of interagency agreements, which include the management of noxious weeds. Unlike on private lands where Western develops cooperative agreements with county agents or boards, on federal lands Western will defer compliance with federal and state weed-control laws and regulations to the landowner or administrator. Herbicide use on NPS, USFS, and/or BLM lands is restricted to specifically approved herbicides that the respective agency has approved for application on their jurisdictional lands.

Western will only use herbicides that have been approved and that have had human health and ecological risk assessments prepared. USFS has prepared comprehensive risk assessments for 14 herbicides routinely used in the forest (see website www.fs.fed.us/foresthealth/pesticide/risk.shtml). These documents quantitatively evaluate the probability that a given pesticide use might impose harm on humans or other species in the environment. Table B-1 provides a list of herbicides that Western may request to use on NPS, USFS, and BLM lands.

Table B-1 Herbicides Planned for Use in NPS, BLM, USFS and Private Lands

Herbicide	Trade Name**	EPA Registration Number	Use	Aquatic	Land Use Application			
					NPS	BLM	USFS	Private Lands
Bromacil and Diuron	Krovar® 1 DF**	352-505	Substations; non-sensitive areas only	No				Yes
Chlorsulfuron	Telar® DF**	352-522	ROW	No	Yes[1]	No	Yes	Yes
Clopyralid	Transline®**	62719-259	Noxious Weed Control	No	Yes[1]	No	Yes	Yes
2,4-D	Weedar 64®** 2,4-D LV6 Ester®** HI-DEP®** 2,4-D Amine 4**®	71368-1 228-95 2217-703 1381-103	Substations, ROW Substations, ROW Substations, ROW Substations, ROW	No No No No	Yes[1] Yes[1] Yes[1] Yes[1]	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes
Clopyralid and 2,4-D	Curtail®**	62719-48	Substations, ROW; noxious weed control	No				Yes
Dicamba	Vanquish®** Banvel®**	228-397 51036-289	ROW (Stump Treatment), Substations	No No	Yes[1]	Yes	Yes	Yes Yes
Dithiopyr	Dimension Ultra 40®	62719-445	Landscaped Areas	No				Yes
Diuron	Karmex® DF** Diuron 80 DF IVM®	1812-362 62719-310	Substations Substations	No No				Yes Yes
Flumioxazin	Payload®	59639-120	Bareground – Substations, *Kochia* control	No				Yes
Fosamine Ammonium	Krenite® S**	352-395	ROW	No				Yes
Glyphosate	Roundup® PRO** Aquamaster® (aquatic)** Rodeo® (aquatic)**	524-475 524-343	Substations Areas near water, wetlands	No Yes	Yes[1]	Yes	Yes	Yes Yes

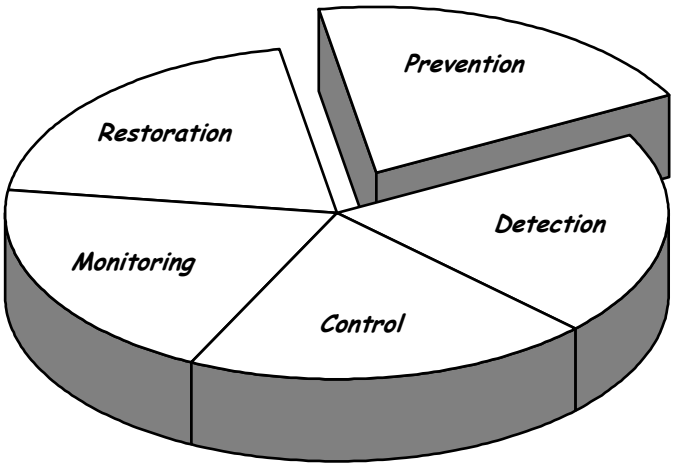
Herbicide	Trade Name**	EPA Registration Number	Use	Aquatic	Land Use Application			
					NPS	BLM	USFS	Private Lands
		62719-324	Areas near water, wetlands	Yes	Yes[1]	Yes	Yes	Yes
Imazapyr	Arsenal® (liquid)** Stalker®** Arsenal® 0.5G**	241-346 241-398 34913-23	Substations, ROW Stump Treatment Substations	No No No	Yes[1] Yes[1]	Yes Yes	Yes Yes	Yes Yes Yes
Oxyfluorfen	GoalTender®	62719-447	Landscaped Sites – Bareground Control	No	Yes[1]	Yes	Yes	Yes
Sulfometuron Methyl	Oust® XP**	352-601	Storage Yards, Subs	No	Yes[1]	Yes	Yes	Yes
Sulfometuron Methyl and Chlorsulfuron	Landmark® MP®	352-621	Bareground - Substations	No				Yes
Tebuthiuron and Diuron	Sprakil SR-13®*8	34913-15	Substations	No				Yes
Mefluidide	Embark® 2S** (Plant growth regulator)	2217-759	Buffers, around subs. (on grass)	No				Yes
Imazapyr and Diuron	Topsite 2.5G®** Sahara DG®**	34913-22 241-372	Substations, some ROW Substations	No No				Yes Yes
Tebuthiuron	Spike® 80DF**	62719-107	Substations	No				Yes
Triclopyr	Garlon 3A®** Garlon 4®*8 Garlon 4 Ultra® Pathfinder ®**	62719-37 62719-40 62719-527 62719-176	ROW Stump Treatment	Yes No No No	Yes[1] Yes[1] Yes[1]	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes Yes
Pendamethalin	Pendulum WDG®	241-340	Substations	No				Yes
Oryzalin	Surflan A.S. ®	70506-44-829	Substations	No				Yes
Fluroxypyr	Vista®	62719-308	ROW, Substation esp. for Kochia	No				Yes
Paclobutrazol	Profile 2SC® (Tree growth regulator)	67690-22	ROW (sensitive areas) Substations	No				Yes

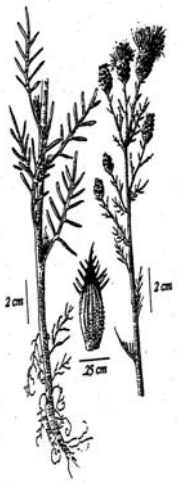
Herbicide	Trade Name**	EPA Registration Number	Use	Aquatic	Land Use Application			
					NPS	BLM	USFS	Private Lands
			(screens)					
Trifluralin	Biobarrier® Biobarrier II®	59823-1 59823-3	Substations, yards	No				Yes

1 NPS does not pre-approve herbicides. On an annual basis, Western shall submit to the NPS regional office an application with intended herbicides and amounts, and identify target species and locations. NPS shall enter the request into the Pesticide Use Proposal system and track its approval process.

Appendix C

Noxious Weed Management





USDA - FOREST SERVICE

Guide *to Noxious Weed Prevention Practices*

INDEX

USDA-Forest Service

GUIDE TO
NOXIOUS WEED PREVENTION PRACTICES

Introduction

Preventing the introduction and spread of noxious weeds is one objective of Integrated Weed Management Programs on National Forest System lands throughout the United States. This Guide to Noxious Weed Prevention Practices (Guide) provides a comprehensive directory of weed prevention practices for use in Forest Service planning and wildland resource management activities and operations. This Guide will help National Forest and Grassland managers and cooperators identify weed prevention practices that mitigate identified risks of weed introduction and spread for a project or program.

This Guide uses the term "*weed*" to include all plants defined as "*noxious weeds*" by Forest Service policy:

> **". . .plants designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof."** (FSM 2080.5)

For National Forests and Grasslands that use a State-defined noxious weed list, the listed weed species are the priority for implementing weed prevention practices in cooperation with neighbors and partners. National forests and grasslands that do not have a State-defined noxious weed list need to determine local weed prevention priorities using weed lists created by other State or local organizations. At line officer's discretion, the practices described in this Guide may also be applied to non-native invasive plants that are not defined as "noxious".

Supporting Direction

> This Guide to Noxious Weed Prevention Practices supports implementation of the February 3, 1999 Executive Order on Invasive Species. Federal agencies are expected to follow the direction in the Executive Order.

Development of weed prevention practices is supported by Forest Service noxious weed policy and strategy. Forest Service policy identifies prevention of the introduction and establishment of noxious weed infestations as an agency objective. This policy directs the Forest Service to: (1) determine the factors that favor establishment and spread of noxious weeds, (2) analyze weed risks in resource management projects, and (3) design management practices to reduce these risks. The Forest Service Noxious Weed Strategy identifies development of practices for prevention and mitigation during ground-disturbing activities as a long-term emphasis item. The February 1999 Executive Order on Invasive Species requires Federal agencies to use relevant programs and

authorities to prevent the introduction of invasive species and not authorize or carry out actions that are likely to cause the introduction or spread of invasive species unless the agency has determined, and made public, documentation that shows that the benefits of such actions clearly outweigh the potential harm, and all feasible and prudent measures to minimize risk of harm will need to be taken in conjunction with the actions.

Using This Guide

All resource management projects need to analyze weed risks in the planning stage. Risk includes identifying the likelihood of weeds spreading to the project area and determining the consequence of weed establishment in the project area. Resource programs undertaking maintenance operations need to analyze weed risks when preparing operating plans. A finding of risk is the basis for identifying the appropriate weed prevention practices from the Guide, which are likely to be effective in a particular project situation.

The Guide to Noxious Weed Prevention Practices provides a toolbox of ideas for use in mitigating identified weed risks in resource management operations. The Guide adds no new requirements or regulations.

In 2001 two weed prevention practices are required by Forest Service policy:

1. **For forested vegetation management operations, use equipment cleaning contract provisions WO-C/CT 6.36 (see Appendix 1)**

2. **Post and enforce weed-free feed orders, where they exist. (FSM 2081.03).**

All other weed prevention practices in this Guide are optional for use based upon an analysis of weed risks. This list of practices, if applied, is considered to be good overall direction, however, not all of these practices can be implemented in every project.

When considering the use of a weed prevention practice for a specific project or resource program, evaluate the efficacy of the weed prevention practice to meet the goal, its feasibility to implement in the specific situation, and its cost-effectiveness. A determination of cost-effectiveness may consider the probability and cost of weed control if a weed prevention practice is not used and the relative contribution of the project or activity to the overall weed risk at the site.

The Guide identifies weed prevention practices that can be applied to specific site-disturbing projects and that may also be applicable for maintenance activities. These weed prevention practices are listed in the first section: "*General Weed Prevention Practices for Site-disturbing Projects and Maintenance Activities*." The remaining sections list weed prevention practices that are more uniquely applicable to particular resource management programs, listed by type of resource activity. The intent of this Guide is for managers to first identify and apply the General Weed Prevention practices and then supplement those practices with the appropriate resource activity specific guidance.

General Weed Prevention Practices for Site-disturbing Projects and Maintenance Programs

Goal 1: Incorporate weed prevention and control into project layout, design, alternative evaluation, and project decisions.

- Practice 1: Environmental analysis for projects and maintenance programs will need to assess weed risks, analyze potential treatment of high-risk sites for weed establishment and spread, and identify prevention practices. Determine prevention and maintenance needs, to include the use of herbicides, if needed, at the onset of project planning.

Goal 2. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

- Practice 2. Before ground-disturbing activities begin, inventory and prioritize weed infestations for treatment in project operating areas and along access routes. Identify what weeds are on site, or within reasonably expected potential invasion vicinity, and do a risk assessment accordingly. Control weeds as necessary.

- Practice 3. After completing "Practice 2" above, to reduce risk of spreading weed infestations, begin project operations in uninfested areas before operating in weed-infested areas.

- Practice 4**.** Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict to those periods when spread of seed or propagules are least likely.

- Practice 5**.** Determine the need for, and when appropriate, identify sites where equipment can be cleaned. Clean equipment before entering National Forest System lands; a Forest Officer, in coordination with the Unit Invasive Species Coordinator, needs to approve use of on-Forest cleaning sites in advance. This practice does not apply to service vehicles traveling frequently in and out of the project area that will remain on the roadway. Seeds and plant parts need to be collected when practical and incinerated. Remove mud, dirt, and plant parts from project equipment before moving it into a project area.

- Practice 6. Clean all equipment, before leaving the project site, if operating in areas infested with weeds. Determine the need for, and when appropriate, identify sites where equipment can be cleaned. Seeds and plant parts need to be collected when practical and incinerated.

- Practice 7. Workers need to inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment. Proper disposal means bagging the seeds and plant parts and incinerating them.

- Practice 8. Coordinate project activities with any nearby herbicide application to maximize cost effectiveness of weed treatments.

- Practice 9. Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way, and other areas of disturbed soils.

Goal 3. Prevent the introduction and spread of weeds caused by moving infested sand, gravel, borrow, and fill material in Forest Service, contractor and cooperator operations. For practices 10 through 12 below, work with the responsible transportation agencies to voluntarily adopt these practices where county and state governments have responsibility for maintenance of roads that cross National Forest System lands.

- Practice 10. Inspect material sources on site, and ensure that they are weed-free before use and transport. Treat weed-infested sources for eradication, and strip and stockpile contaminated material before any use of pit material.

- Practice 11. Inspect and document the area where material from treated weed-infested sources is used, annually for at least three years after project completion, to ensure that any weeds transported to the site are promptly detected and controlled.

- Practice 12. Maintain stockpiled, uninfested material in a weed-free condition.

Goal 4. In those vegetation types with relatively closed canopies, retain shade to the extent possible to suppress weeds and prevent their establishment and growth.

- Practice 13. Retain native vegetation in and around project activity to the maximum extent possible consistent with project objectives.

Goal 5. Avoid creating soil conditions that promote weed germination and establishment.

- Practice 14. Minimize soil disturbance to the extent practical, consistent with project objectives.

Goal 6. Where project disturbance creates bare ground, consistent with project objectives, re-establish vegetation to prevent conditions to establish weeds.

- Practice 15. Revegetate disturbed soil (except travelways on surfaced projects) in a manner that optimizes plant establishment for that specific site. Define for each project what constitutes disturbed soil and objectives for plant cover revegetation.

- Practice 16. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching as necessary. Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. Always use certified materials in areas closed by administrative order; refer to Appendix 3 for a sample closure order. Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g. road embankments or landings)

- Practice 17. Use local seeding guidelines to determine detailed procedures and appropriate

mixes. To avoid weed-contamination, a certified seed laboratory needs to test each lot against the all-State noxious weed list to Association of Seed Technologists and Analysts (AOSTA) standards, and provide documentation of the seed inspection test. There are plant species not on State and Federal noxious weed lists that the Forest Service would consider non-native invasive weeds. Check State and Federal lists to see if any local weeds need to be added prior to testing. Seed lots labeled as certified weed free at time of sale may still contain some weed seed contamination. Non-certified seed should first be tested before use.

- Practice 18. Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least three (5) growing seasons following completion of the project. For on-going projects, continue to monitor until reasonable certainty is obtained that no weeds have occurred. Provide for follow-up treatments based on inspection results.

Goal 7. Improve effectiveness of prevention practices through weed awareness and education.

- Practice 19. Provide information, training and appropriate weed identification materials to people potentially involved in weed introduction, establishment, and spread on National Forest System lands, including agency managers, employees, forest workers, permit holders, and recreational visitors. Educate them to an appropriate level in weed identification, biology, impacts, and effective prevention measures.

- Practice 20. Provide proficient weed management expertise at each administrative unit. Expertise means that necessary skills are available and corporate knowledge is maintained.

- Practice 21. Develop incentive programs encouraging weed awareness detection, reporting, and for locating new invaders.

Goal 8. Set the example; maintain weed-free administrative sites.

- Practice 22. Treat weeds at administrative sites and use weed prevention practices to maintain sites in a weed-free condition.

Aquatic Weed Prevention Practices

Goal 1. To prevent new weed infestations and the spread of existing weeds, avoid or remove sources of weed seed and propagules.

- Aquatic 1. Provide outreach to state fish and game departments, counties, and other agencies concerning the unique prevention measures and control practices associated with aquatic weeds.

- Aquatic 2. Inspect boats (including air boats), trailers, and other boating equipment and remove any visible plants, animals, or mud before leaving any waters or boat launching facilities. Drain water from motor, live well, bilge, and transom wells while on land before

leaving the vicinity. Wash and dry boats, tackle, downriggers, anchors, nets, floors of boats, props, axles, trailers, and other boating equipment to kill weeds not visible at the boat launch.

- Aquatic 3. Before transporting to new waters, rinse boat and boating equipment with hot (40°C or 104°F) clean water, spray boat or trailer with high-pressure water, or dry boat and equipment for at least 5 days.

- Aquatic 4. Inspect seaplanes and remove weeds from floats, wires, cables, water rudders, and pump floats; wash with hot water or spray with high-pressure water, or dry for at least 5 days.

- Aquatic 5. Before take-off – avoid taxiing through heavy surface growths of weeds before takeoff; raise and lower water rudders several times to clear off plants. If weeds were picked up during landing, clean off the water rudders before take-off and leave the water rudders up during take-off. After take-off – if water rudders were down during take-off, raise and lower water rudders several times to free weed plant fragments while over original body of water or over land. If weeds remain visible on floats or water rudders, the pilot may return to flight origin and remove plants if an extra landing and takeoff is not a safety concern.

- Aquatic 6. Maintain a l00 feet buffer of aquatic weed-free clearance around boat launches and docks.

- Aquatic 7. Promptly post sites if aquatic invasives are found. Confine infestation; where prevention is infeasible or ineffective, close facility until infestation is contained.

- Aquatic 8. Wash and dry tackle, downriggers, float tubes, waders, and other equipment to remove or kill harmful species not visible at the boat launch.

- Aquatic 9. Avoid moving weed plants from one body of water to another.

- Aquatic 10. Avoid running personal watercraft through aquatic plants near boat access locations. Instead, push or winch watercraft onto the trailer without running the engine. After the watercraft is out of the water, start the engine for 5-10 seconds to blow out any excess water and vegetation. After engine has stopped, pull weeds out of the steering nozzle. Inspect trailer and any other sporting equipment for weed fragments and remove them before leaving the access area. Wash or dry watercraft before transporting to another body of water.

- Aquatic 11. Waterfowl hunters may use elliptical, bulb-shaped, or strap anchors on decoys, because these types of anchors avoid collecting submersed and floating aquatic plants. Inspect waders and hip boots, removing any aquatic plants, and where possible, rinse mud from them before leaving the water. Remove aquatic plants, animals, and mud attached to decoy lines and anchors.

- Aquatic 12. Construct new boat launches and ramps at deep-water sites. Restrict motorized boats in lakes near areas that are infested with weeds. Move sediment to upland

or quarantine areas when cleaning around culverts, canals, or irrigation sites. Clean equipment before moving to new sites. Inspect and clean equipment before moving from one project area to another.

Cultural Resources

- Use the General weed prevention practices.

Fire Management

Pre-fire, Pre-incident Training

Goal 1. Improve effectiveness of prevention practices through weed awareness and education.

- Fire 1. Increase weed awareness and weed prevention in all fire training.

- Fire 2. Include weed risk factors and weed prevention practices in Resource Advisor duties on all Incident Management Teams and Burn Rehabilitation Teams.

Plans

Goal 2. Improve effectiveness of prevention practices through weed awareness and education.

- Fire 3. Assign a local weed specialist or include in Resource Advisor duties to the Incident Management Team when wildfire or control operations occur in or near a noxious weed area.

- Fire 4. Resource Advisors need to provide briefings that identify operational practices to reduce weed spread, (for example: avoiding known weed infestation areas when locating fire lines). Include this information in shift briefings.

- Fire 5. Provide weed identification aids to Field Observers.

Wildfires – General

All wildfire weed prevention goals apply except in instances where human life or property is at risk.

Goal 3. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

- Fire 6. Ensure that rental equipment is free of weed seed and propagules before the contracting officers representative accepts it.

- Fire 7. Maintain a network of airports, helibases, camps, and staging areas in a noxious weed-free condition.

- Fire 8. Coordinate with local weed specialists to locate and treat practice jump areas to make them weed-free.

- Fire 9. Inspect and treat weeds that establish at equipment cleaning sites after fire incidents.

Goal 4. Avoid creating soil conditions that promote weed germination and establishment.

- Fire 10. Use appropriate suppression tactics to reduce suppression-induced disturbances to soil and vegetation while minimizing seedbed creation due to disturbance from fire effects. .

- Fire 11. Avoid moving water buckets from infested lakes to lakes that are not infested prior to inspection and cleaning. There is no hazard in using water infested with aquatic weeds on terrestrial sites.

Prescribed Fire

Goal 5. To prevent new weed infestations and the spread of existing weeds, avoid or remove sources of weed seed and propagules or manage fire as an aid in control of weeds.

- Fire 12. Ensure that rental equipment is free of weed seed and propagules before the contracting officers representative accepts it.

- Fire 13. Avoid ignition and burning in areas at high risk for weed establishment or spread due to fire effects. Treat weeds that establish or spread because of unplanned burning of weed infestations.

- Fire 14. When possible use staging areas and helibases that are maintained in a weed-free condition.

- Fire 15. Pre-inventory project area and evaluate weeds present with regard to the effects on the weed spread relative to the fire prescription.

Goal 6. Avoid creating soil conditions that promote weed germination and establishment.

- Fire 16. Use appropriate preparation and suppression tactics to reduce disturbances to soil and vegetation.

Fire Rehabilitation

Goal 7. Incorporate weed prevention into project layout, design, alternative evaluation, and decisions.

- Fire 17. Evaluate weed status and risks in Burned Area Emergency Rehabilitation plans.

When appropriate, apply for Burned Area Emergency Rehabilitation and restoration funding.

Goal 8. To prevent conditions favoring weed establishment, re-establish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques as appropriate to the site objectives.

- Fire 18. To prevent weed spread, treat weeds in burned areas as part of the Burned Area Emergency Rehabilitation plan. For known infestations that will likely increase, the first preference is prevention, such as planting species to compete with unwanted plants.

- Fire 19. Inspect and document weed establishment at fire access roads, cleaning sites, all disturbed staging areas, and within burned areas; control infestations to prevent spread within burned areas. If you suspect the presence of noxious weeds, request BAER funds to inspect and document for emergence in the spring. Request BAER funds for control if noxious weeds are present and NEPA has already been approved.

- Fire 20. Seed and straw mulch to be used for burn rehabilitation (for wattles, straw bales, dams, etc.) all need to be inspected and certified that they are free of weed seed and propagules.

- Fire 21. Regulate human, pack animal, and livestock entry into burned areas at risk for weed invasion until desirable site vegetation has recovered sufficiently to resist weed invasion.

Forest Vegetation Management

Timber Harvest Operations & Stewardship Contracting

Goal 1. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

- Forest Veg 1. Treat weeds on projects used by contractors, emphasizing treatment of weed infestations on existing landings, skid trails, and helibases before activities commence.

- Forest Veg 2. Train contract administrators to identify noxious weeds and select lower risk sites for landings and skid trails.

- Forest Veg 3. Encourage operators to maintain weed-free mill yards, equipment parking, and staging areas.

- Forest Veg 4. Use standard timber sale contract provisions such as WO-C/CT 6.36 to ensure appropriate equipment cleaning (reference Appendix 1).

Goal 2. To prevent weed germination and establishment, retain native vegetation in and around project activity and keep soil disturbance to a minimum consistent with project objectives.

- Forest Veg 5. Minimize soil disturbance to no more than needed to meet project objectives. Logging practices to reduce soil disturbance include, but are not limited to:

  - Over-snow logging
  - Skyline or helicopter logging
  - Reuse landings, skid trails and helibases when they are weed free

- Forest Veg 6. Minimize period from end of logging to site preparation, revegetation, and contract closure.

Post Vegetation Management Operations

Goal 3. To prevent weed germination and establishment, retain native vegetation in and around project activity and keep soil disturbance to a minimum consistent with project objectives.

- Forest Veg 7. Minimize soil disturbance to no more than needed to meet vegetation management objectives. Prevention practices to reduce soil disturbance include, but are not limited to:

  - Treating fuels in place instead of piling
  - Minimizing heat transfer to soil in burning
  - Minimizing fireline construction

Goal 4. To prevent favorable conditions for weed establishment, re-establish vegetation on bare ground caused by project disturbance.

- Forest Veg 8. For long-term restoration and weed suppression where forested vegetation management has created openings, recognize the need for prompt reforestation.

Grazing Management

Goal 1. Consider noxious weed prevention and control practices in the management of grazing allotments.

- Grazing 1. Include weed prevention practices, inspection and reporting direction, and provisions for inspection of livestock concentration areas in allotment management plans and annual operating instructions for active grazing allotments.

- Grazing 2. For each grazing allotment containing existing weed infestations, include prevention practices focused on preventing weed spread and cooperative management of weeds in the annual operating instructions. Prevention practices may include, but are not limited to:

- Altering season of use
- Exclusion
- Activities to minimize potential ground disturbance
- Preventing weed seed transportation
- Maintaining healthy vegetation
- Weed control methods
- Revegetation
- Inspection
- Reporting
- Education

Goal 2. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds. Minimize transport of weed seed into and within allotments.

- Grazing 3. If livestock are potentially a contributing factor to seed spread, schedule use by livestock in units with existing weed infestations which are known to be susceptible to spread by livestock, to be prior to seed-set or after seed has fallen.

- Grazing 4. If livestock were transported from a weed-infested area, annually inspect and treat allotment entry units for new weed infestations.

- Grazing 5. Close pastures to livestock grazing when the pastures are infested to the degree that livestock grazing will continue to either exacerbate the condition on site or contribute to weed seed spread. Designate those pastures as unsuitable range until weed infestations are controlled.

Goal 3. Maintain healthy, desirable vegetation that is resistant to weed establishment.

- Grazing 6. Through the allotment management plan or annual operating instructions, manage the timing, intensity (utilization), duration, and frequency of livestock activities associated with harvest of forage and browse resources to maintain the vigor of desirable plant species and retain live plant cover and litter.

- Grazing 7. Manage livestock grazing on restoration areas to ensure that vegetation is well established. This may involve exclusion for a period of time consistent with site objectives and conditions. Consider practices to minimize wildlife grazing on the areas if needed.

Goal 4. Minimize disturbed ground conditions favorable for weed establishment in the management of livestock grazing.

- Grazing 8. Include weed prevention practices that reduce ground disturbance in allotment management plans and annual operating instructions. Consider for example: changes in the timing, intensity, duration, or frequency of livestock use; location and changes in salt grounds; restoration or protection of watering sites; and restoration of yarding/loafing areas, corrals, and other areas of concentrated livestock use.

- Grazing 9. Inspect known areas of concentrated livestock use for weed invasion.

Inventory and manage new infestations.

Goal 5. Improve effectiveness of weed prevention practices through awareness programs and education. Promote weed awareness and prevention efforts among range permittees.

- Grazing 10. Use education programs or annual operating instructions to increase weed awareness and prevent weed spread associated with permittees' livestock management practices.

- Grazing 11. To aid in their participation in allotment weed control programs, encourage permittees to become certified pesticide use applicators.

Lands and Special Uses

Goal 1. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

- Lands 1. Consider weed status of lands when making land adjustment decisions.

- Lands 2. Conduct weed inventories of all lands considered for acquisition.

- Lands 3. As a condition of land adjustment decisions, the Forest Service may require the nonfederal proponent to treat weeds, to federal standards, on the land proposed for federal acquisition.

- Lands 4. Include a weed prevention and control provision in all new special-use authorizations such as, permits, easements or leases involving ground-disturbing activities when authorized activities present a high risk for weed infestation or the location of the activity is vulnerable to weed introduction or spread. Include a weed prevention and control provision in existing authorizations that authorize ground-disturbing activities when the authorization is amended for other reasons; consider the need to amend an authorization directly, when ground-disturbing activities are involved. These provisions can be accomplished through the development and incorporation of a supplemental clause (reference sample clause R1-D4 in Appendix 2) or as a requirement in an associated operation and maintenance plan.

Minerals

Goal 1. Incorporate weed prevention into project layout, design, alternative evaluation, and decisions.

- Minerals 1. Include weed prevention measures, including project inspection and documentation, in operation and reclamation plans.

Goal 2. To prevent conditions favoring weed establishment, minimize bare soil conditions and re-establish vegetation on bare ground caused by project disturbance.

- Minerals 2. Retain bonds until reclamation requirements are completed, including weed treatments, based on inspection and documentation.

Recreation, Wilderness, and Special Management Areas

Goal 1. To prevent new weed infestations and the spread of existing weeds, avoid or remove sources of weed seed and propagules.

- Recreation 1. Encourage public land users before recreating on public lands, to inspect and clean motorized and mechanized trail vehicles of weeds and their seeds.

- Recreation 2. On designated public lands, issue closure orders that specify the use of weed free or weed-seed-free feed, hay, straw, and mulch. Refer to 36 CFR 251.50 and Appendix 3. Cooperate with State, County, Tribal governments, and other agencies to develop and support publicly available weed-free materials.

- Recreation 3. Where they exist, post and enforce weed-free feed orders. (FSM 2081.03)

- Recreation 4. Encourage backcountry pack and saddle stock users to feed stock only weed-free feed for several days before travel on National Forest System lands.

- Recreation 5. Inspect, brush, and clean animals, especially hooves and legs before entering public land. Inspect and clean tack and equipment.

- Recreation 6. Tie or hold stock in ways that minimize soil disturbance and avoid loss of desirable native vegetation.

- Recreation 7. Annually inspect all campgrounds, trailheads, and recreation areas that are open to public vehicle use for weeds; treat new infestations.

- Recreation 8. Maintain trailheads, boat launches, outfitter and public camps, picnic areas, airstrips, roads leading to trailheads, and other areas of concentrated public use in a weed-

free condition. Consider high use recreation areas as high priority for weed eradication.

- Recreation 9. Consider seasonal or full time closure to campgrounds, picnic areas, and other recreation use areas until weeds are reduced to levels that minimize potentials for spread.

- Recreation 10. In areas susceptible to weed infestation, limit vehicles to designated, maintained travel routes. Inspect and document inspections on travelways for weeds and treat as necessary.

Goal 2. Improve effectiveness of prevention practices through weed awareness and education.

- Recreation 11. Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and forest portals.

- Recreation 12. In weed-infested areas, post weed awareness messages and prevention practices at roadsides.

Research Activities

Goal 1. Incorporate weed prevention into research project design, layout, installation, and decisions.

- Research 1. Address weed establishment risk and spread in research project study plans and decisions.

Road Management

New and Reconstruction

Goal 1. Incorporate weed prevention into project layout, design, alternative evaluation, and decisions.

- Road 1. For timber sale purchaser road maintenance and decommissioning, use standard timber sale contract provisions such as WO-C/CT 6.36 to ensure appropriate equipment cleaning (reference Appendix 1).

- Road 2. For road new and reconstruction conducted as part of public works (construction) contracts and service contracts include contract language for equipment cleaning such as is in WO-C/CT 6.36 (Appendix 1).

Road Maintenance and Decommissioning

Goal 2. Minimize roadside sources of weed seed that could be transported to other areas.

- Road 3. Periodically inspect system roads and rights-of-way for invasion of noxious weeds. Train road maintenance staff to recognize weeds and report locations to the local weed specialist. Inventory weed infestations and schedule them for treatment.

- Road 4. Schedule and coordinate blading or pulling of noxious weed-infested roadsides or ditches in consultation with the local weed specialist. Do not blade or pull roadsides and ditches that are infested with noxious weeds unless doing so is required for public safety or protection of the roadway. If the ditch must be pulled, ensure the weeds remain on-site. Blade from least infested to most infested areas. When it is necessary to blade noxious weed-infested roadsides or ditches, schedule activity when seeds or propagules are least likely to be viable and to be spread. Minimize soil surface disturbance and contain bladed material on the infested site.

- Road 5. Avoid acquiring water for dust abatement where access to the water is through weed-infested sites.

- Road 6. For timber sale purchaser road maintenance and decommissioning, use contract provisions for equipment cleaning such as WO-C/CT 6.36 (Appendix 1).

- Road 7. For road maintenance and decommissioning conducted as part of public works (construction) contracts and service contracts include contract language for equipment cleaning such as is in WO-C/CT 6.36 (Appendix 1).

- Road 8. Treat weeds in road decommissioning and reclamation projects before roads are made impassable. Reinspect and follow-up based on initial inspection and documentation.

Watershed Management

Goal 1. Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

- Watershed 1. Inspect and document for early detection of noxious weed establishment and spread in riparian areas and wetlands. Eradicate new infestations before they become established.

- Watershed 2**.** Address noxious weed risks in watershed restoration projects and water quality management plans.

- Watershed 3. Pay particular attention to practices listed under “General Weed Prevention Practices for Site-disturbing Projects and Maintenance Programs” and Aquatic Weed Prevention Practices”.

Wildlife, Fisheries, and Botany

Goal 1. Avoid creating soil conditions that promote weed germination and establishment.

- Wildlife 1. Periodically inspect and document those areas where wildlife concentrate in the winter and spring resulting in overuse or soil scarification.

- Wildlife 2. Use weed-free materials at big game baiting stations.

- Wildlife 3. For wildlife openings and habitat improvement projects, follow the practices outlined in General Weed Prevention Practices--Goal 4; Forest Vegetation Management, Timber Harvest Operations & Stewardship Contracting.

APPENDIX 1
FOREST SERVICE TIMBER SALE CONTRACT PROVISIONS

WO-C6.36

C6.36 – EQUIPMENT CLEANING. (5/01) Unless the entire Sale Area is already infested with specific noxious weed species of concern, Purchaser shall ensure that prior to moving on to the Sale Area all off-road equipment, which last operated in areas known by Forest Service to be infested with specific noxious weeds of concern, is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Purchaser shall certify in writing that off-road equipment is free of noxious weeds prior to each start-up of timber sale operations and for subsequent moves of equipment to Sale Area. The certification shall indicate the measures taken to ensure that off-road equipment is free of noxious weeds will be identified. "Off-road equipment" includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles. A current list of noxious weeds of concern to Forest Service is available at the Forest Supervisor's Office.

Purchaser must clean off-road equipment prior to moving between cutting units on this timber sale that are known to be infested with noxious weeds and other units, if any, that are free of such weeds. Sale Area Map shows areas, known by Forest Service prior to timber sale advertisement, that are infested with specific noxious weed species of concern.

Purchaser shall employ whatever cleaning methods are necessary to ensure that off-road equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

Purchaser shall notify Forest Service at least 5 days prior to moving each piece of off-road equipment on to the Sale Area, unless otherwise agreed. Notification will include identifying the location of the equipment's most recent operations. If the prior location of the off-road equipment cannot be identified, Forest Service may assume that it was infested with noxious weed seeds. Upon request of Forest Service, Purchaser must arrange for Forest Service to inspect each piece of off-road equipment prior to it being placed in service.

If Purchaser desires to clean off-road equipment on National Forest land, such as at the end of a project or prior to moving to a new unit that is free of noxious weeds, Purchaser and Forest Service shall agree on methods of cleaning, locations for the cleaning, and control of off-site impacts, if any.

New infestations of noxious weeds, of concern to Forest Service and identified by either Purchaser or Forest Service on the Sale Area, shall be promptly reported to the other party. Purchaser and Forest Service shall agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. In the event of contract modification under this Subsection, Purchaser shall be reimbursed for any additional protection required, provided that any work or

extra protection required shall be subject to prior approval by Forest Service. Amount of reimbursement shall be determined by Forest Service and shall be in the form of a reduction in stumpage rates, unless agreed otherwise in writing. However, in no event may stumpage rates be reduced below Base Rates.

INSTRUCTIONS: Include in all new contracts.

The Forest Service must identify on the sale area map units that are infested with specific noxious weeds species of concern.

The prospectus for the sale must notify prospective purchasers that maps of these known locations are available from the local Forest Supervisor's Office or District Ranger Station. A list of noxious weeds of concern to the Forest Service (normally included in the Noxious Weed Program Guide) must be available for the purchaser's inspection. The current National Forest Noxious Weed Program Guide, noxious weed atlas, or other data sources, as needed, will be used to determine locations of known infestation.

Significant changes in the status of noxious weed infestations on the sale may require contract modifications to deal with changed conditions. An example might be where new noxious weed infestations are discovered after contract award, which require costly additional methods to prevent the spread of such infestations.

WO-CT6.36

CT6.36 – EQUIPMENT CLEANING. (5/01) Unless the entire Sale Area is already infested with specific noxious weed species of concern, Purchaser shall ensure that prior to moving on to the Sale Area all off-road equipment, which last operated in areas known by Forest Service to be infested with specific noxious weeds of concern, is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Purchaser shall certify in writing that off-road equipment is free of noxious weeds prior to each start-up of timber sale operations and for subsequent moves of equipment to Sale Area. The certification shall indicate the measures taken to ensure that off-road equipment is free of noxious weeds will be identified. "Off-road equipment" includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles. A current list of noxious weeds of concern to Forest Service is available at the Forest Supervisor's Office.

Purchaser must clean off-road equipment prior to moving between cutting units on this timber sale that are known to be infested with noxious weeds and other units, if any, that are free of such weeds. Sale Area Map shows areas, known by Forest Service prior to timber sale advertisement, that are infested with specific noxious weed species of concern.

Purchaser shall employ whatever cleaning methods are necessary to ensure that off-road equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

Purchaser shall notify Forest Service at least 5 days prior to moving each piece of off-road equipment on to the Sale Area, unless otherwise agreed. Notification will include identifying the location of the equipment's most recent operations. If the prior location of the off-road equipment cannot be identified, Forest Service may assume that it was infested with noxious weed seeds. Upon request of Forest Service, Purchaser must arrange for Forest Service to inspect each piece of off-road equipment prior to it being placed in service.

If Purchaser desires to clean off-road equipment on National Forest land, such as at the end of a project or prior to moving to a new unit that is free of noxious weeds, Purchaser and Forest Service shall agree on methods of cleaning, locations for the cleaning, and control of off-site impacts, if any.

New infestations of noxious weeds, of concern to Forest Service and identified by either Purchaser or Forest Service on the Sale Area, shall be promptly reported to the other party. Purchaser and Forest Service shall agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. In the event of contract modification under this Subsection, Purchaser shall be reimbursed for any additional protection required, provided that any work or extra protection required shall be subject to prior approval by Forest Service. Amount of reimbursement shall be determined by Forest Service and shall be in the form of a reduction in stumpage rates, unless agreed otherwise in writing. However, in no event may stumpage rates be reduced below Base Rates.

INSTRUCTIONS: Include in all new contracts.

The Forest Service must identify on the sale area map units that are infested with specific noxious weeds species of concern.

The prospectus for the sale must notify prospective purchasers that maps of these known locations are available from the local Forest Supervisor’s Office or District Ranger Station. A list of noxious weeds of concern to the Forest Service (normally included in the Noxious Weed Program Guide) must be available for the purchaser's inspection. The current National Forest Noxious Weed Program Guide, noxious weed atlas, or other data sources, as needed, will be used to determine locations of known infestation.

Significant changes in the status of noxious weed infestations on the sale may require contract modifications to deal with changed conditions. An example might be where new noxious weed infestations are discovered after contract award, which require costly additional methods to prevent the spread of such infestations.

APPENDIX 2

SAMPLE SPECIAL USE SUPPLEMENTAL CLAUSE
USDA-FOREST SERVICE
NORTHERN REGION

Include a weed prevention and control provision, such as the following supplemental clause example, in all new special-use authorizations such as, permits, easements, and leases, or when those authorizations are amended, when there are ground-disturbing activities.

The following is a weed prevention and control supplemental clause approved for use in Region 1. **(Reminder: Supplemental clauses used in a special use authorization must be reviewed and approved by the Regional Forester, after review by the local Office of the General Counsel.)**

R1 SUPPLEMENT 2709.11-2000-1 **2709.11, 50**
EFFECTIVE 02/08/2000 **Page 31 of 41**

R1-D4 - Noxious Weed/Exotic Plant Prevention and Control. Use this clause in all authorizations involving ground disturbance which could result in the introduction or spread of noxious weeds and/or exotic plants. This clause may also be used where cooperative agreements for noxious weed control are in place with state and local governments.

> The holder shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern on the area authorized by this authorization and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by (*insert county weed authority and/or national forest*) in which the authorized use is located.
>
> The holder shall also be responsible for prevention and control of noxious weed and exotic plant infestations which are not within the authorized area, but which are determined by the Forest Service to have originated within the authorized area.
>
> When determined to be necessary by the authorized officer, the holder shall develop a site-specific plan for noxious weed and exotic plant prevention and control. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the noxious weed and exotic plant prevention and control plan shall become a part of this authorization, and its provisions shall be enforceable under the terms of this authorization.

With respect to the second paragraph of the above provision, the intent is to apply this

provision only for a well defined confined area such as a narrow linear right-of-way where it can be determined without a doubt that the noxious weeds resulted from the activities of the holder.

APPENDIX 3
Example of a Closure Order

Closure Order

SPECIAL ORDER
OCCUPANCY AND USE
ON NATIONAL FOREST SYSTEM LANDS
IN THE STATE OF MONTANA

Pursuant to the Regulations of the Secretary of Agriculture, Title 36 CFS 261.50 (a) and (b), the following acts are prohibited within all National Forest System lands within the State of Montana.

These restrictions are in addition to those enumerated in Subpart A, part 261, Title 36 of the Code of Federal Regulations and will remain in effect from October 6, 1997, until rescinded or revoked.

1. The possession or storage of hay, grain, straw, cubes, palletized feed or mulch that is not certified as being noxious weed free or noxious weed seed free by an authorized State Department of Agriculture official or designated county official; each individual bale or container must be tagged or marked as weed free and reference the written certification (36 CFR 261.58 (t)).

Pursuant to 36 CFR 261.50 (e), the following are exempt from this Order:

A. Persons with a permit specifically authorizing the action or omission.

B. Transporting feeds, straw, or hay on Federal, State, and county roads that are not Forest Development Roads or Trails.

The above restrictions are necessary to prevent the spread of noxious weeds on National Forest Systems lands (16 USC 551). Upon issuance of this order, all previous orders requiring the use of certified noxious weed free or noxious weed seed free forage on NFS lands in Montana shall be superceded.

Violation is punishable by a fine of up to $5,000 and/or up to six months imprisonment (16 U.S.C. 551 and 18 U.S.C. 3571 (b) (6).

/S/ Kathleen A. McAllister 10-8-97

_____ _____

HAL SALWASSER Date
Regional Forester
Northern Region

Noxious Weeds Management

January 2004

- Inform forest users, local agencies, special use permittees, groups, and organizations in communities near national forests about noxious weed prevention and management.
- Work cooperatively with California and Nevada State agencies and individual counties (for example, Cooperative Weed Management Areas) to: (1) prevent the introduction and establishment of noxious weed infestations and (2) control existing infestations.
- As part of project planning, conduct a noxious weed risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy to develop mitigation measures for high and moderate risk activities.
- When recommended in project-level noxious weed risk assessments, consider requiring off-road equipment and vehicles (both Forest Service and contracted) used for project implementation to be weed free. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
- Minimize weed spread by incorporating weed prevention and control measures into ongoing management or maintenance activities that involve ground disturbance or the possibility of spreading weeds. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
- Conduct follow-up inspections of ground disturbing activities to ensure adherence to the Regional Noxious Weed Management Strategy.
- Encourage use of certified weed free hay and straw. Cooperate with other agencies and the public in developing a certification program for weed free hay and straw. Phase in the program as certified weed free hay and straw becomes available. This standard and guideline applies to pack and saddle stock used by the public, livestock permittees, outfitter guide permittees, and local, State and Federal agencies.
- Include weed prevention measures, as necessary, when amending or re-issuing permits (including, but no limited to, livestock grazing, special uses, and pack stock operator permits).

- Include weed prevention measure and weed control treatments in mining plans of operation and reclamation plans. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy. Monitor for weeds, as appropriate, for 2 years after project implementation (assuming no weed introductions have occurred).

- Conduct a risk analysis for weed spread associated with burned area emergency rehabilitation (BAER) treatments. The BAER team is responsible for conducting this analysis. Monitor and treat weed infestations for 3 years after the fire.

- Consult with American Indians to determine priority areas for weed prevention and control where traditional gathering areas are threatened by weed infestations.

- Complete noxious weed inventories, based on regional protocol. Review and update these inventories on an annual basis.

- As outlined in the Regional Noxious Weed Management Strategy, when new, small weed infestations are detected, emphasize eradication of these infestations while providing for the safety of field personnel.

- Routinely monitor noxious weed control projects to determine success and to evaluate the need for follow-up treatments or different control methods. Monitor known weed infestations, as appropriate, to determine changes in weed population density and rate of spread.

Appendix D

Habitat Descriptions

APPENDIX D HABITAT DESCRIPTIONS

Habitat Types Present in the Project Area

Agriculture, rice (Agri); rice fields, note if flooded or fallow
Agriculture, orchard (Agor); fruit trees, note type if can
Agriculture, pasture (Agps); note if irrigated
Agriculture, grain (Aggr) alfalfa, hay; note if irrigated
Agriculture, vineyard (Agvn); grapes, kiwi
Agriculture, row crop (Agrc); tomatoes, root crops, safflower, etc.; note type if can
Agriculture, nursery/garden (Agga); note type

Barren (Bar); rock, pavement, sand, etc**.**

Chaparral, mixed (Cmi); shrub dominant, chamise, buckthorn, poison oak, fremontia, toyon; <5,000'
Chaparral, montane (Cmo); mostly evergreen shrub, manzanita, ceanothus, chinquapin; 3,000-10,000'
Chaparral, oak (Coa); dense, tall, live/blue oak, manzanita, toyon, buckbrush, poison oak; Sierra foothills

Commercial, industrial (Com); developed land use other than residential or farms

Elderberry, isolated (Ebis); elderberry shrub not in savanna setting
Elderberry, savanna (Ebsv); note elderberry savanna boundary and associated dominant plants

Forest, Douglas fir (Fdf);tall evergreen Doug fir w/tanoak, madrone, pines, black oak; 1,000-4,000'
Forest, Klamath mixed conifer (Fkm); evergreen trees w/shrubs; firs and pines, Klamath region
Forest, mixed conifer (Fmc); firs and pines, cedar, chinquapin, currant, snowberry; 2,000-6,500'
Forest, ponderosa pine (Fpp); >50% ponderosa pine, cedar, fir, blk oak, live oak, tanoak;800-5,000'
Forest, white fir (Fwf); white fir dominant, live oak, chinquapin, squawcarpet; 4,500-5,000'

Golf (Glf); golf course

Grasslands, non-native annual/ naturalized (Gnn); soft chess, wild oats, ripgut, ryegrass;<3,000'
Grasslands, native perennial (Gnp); soft chess, orchardgrass, oatgrass, fescue, hairgrass

Gully (Gully); gully in access road, note if repairs needed

Levee (Lev); man-made levee structure

Meadow, other (Mot); seasonally dry swales, ann. grasses, forbes, some meadow species when wet
Meadow, wet montane (Mwm); herbaceous, sedges, rushes, corn lily, clover; >3,940'

Other (Oth); describe habitat type with dominant species

Park (Prk); maintained public park

Riparian, Great Valley forest (Rgf); valley oak, blk walnut, sycamore, cottonwood, elderberry;<500'
Riparian, Great Valley scrub (Rgs); willows, elderberry, verbena, blackberry; <1,000'
Riparian, montane aspen (Rma); Aspen, willows, alders, cottonwood, aspen, pines; 6,500-9,850'
Riparian, montane scrub (Rms); willows, alder, dogwood, near montane meadows; <8,000'
Riparian, montane white alder (Rmw); white alder, maple, ash, bay, willow, cottonwood;<6,000'

Scrub, sagebrush bitterbrush (Ssb); big sagebrush/bitterbrush, ponderosa, juniper; 1,600-10,500'

Urban (Urb); lawns, trees, backyard

Waters, creek, intermittent (Waci); intermittent creek, < 20 feet wide
Waters, creek, perennial (Wacp); continually flowing, < 20 feet wide
Waters, pond (Wapd); small, <6' deep
Waters, lake (Walk); large, > 6' deep
Waters, river (Warv); perennial/intermittent, > 20 feet wide
Waters, seep/spring (Wasp); note origin
Waters, impoundment (Waim); stock pond, man-made ponding feature
Waters, drainage (Wadr); ditches, agriculture drainages (usually well vegetated and shallow)
Waters, irrigation canal (Waic); flooded up to supply irrigation water to fields, usually deeper
Waters, other (Waot); culvert/pipe, other waters not classified (note type)

Wetlands, freshwater marsh (Wfm); perennial sedge, rushes, nutgrass, cattail, bulrush; <7,500'
Wetlands, other (Wot); wetland not classified in other categories
Wetlands, **seasonal (Wse);** seasonal ponding, ryegrass, barley, curly dock, rushes, eleocharis
Wetlands, vernal pool isolated (Wvpi); seasonal ponding, coyote thistle, popcorn flwr, downingia, toadrush, goldfields, typically with colorful, concentric rings

Woodland, black oak (Wbla); black oak, ponderosa, cedar, live oak, manzanita; 200-8,000'
Woodland, blue oak (Wblu); blue oak, foothill pine, valley grassland understory; <3,000-4,000'

Woodland, foothill pine-chapparal (Wfp); foothill pine, blue oak, buckeye, ridges and canyons
Woodland, live oak (Wlo); live oak, foothill pine, toyon, buckbrush, coffeeberry, foothills <2,000’

Appendix E

Culvert and Drainage Dip Descriptions

Appendix F

Additional O&M Requirements and Information

COMPARISON OF TANC'S PAST O&M REQUIREMENTS WITH THE 2010 O&M PLAN

This table compares commitments made in TANC's Updated California-Oregon Transmission Project (COTP) O&M Plan (2000) with functional equivalents in the TANC-USFS O&M Plan (2010). Items are listed in the order presented in the COTP Plan. If there is a corresponding item in this O&M Plan, the section/location is noted. Differences are noted in italics.

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
1) Introduction	Section 1
2) Coordination and Communication	Section 2
a. Principal representatives	Section 2.1
b. Noncompliance	Section 2.2
c. Plan amendments and changes	Section 2.3
d. Tracking and identification	Section 2.4
3) Financing	Appendix F
4) Operation and maintenance activities	Section 3
a. Introduction	
i. Safe operation of the powerline requires 25 feet of clearance with vegetation below the line.	Section 3.2.1- *18 feet* of clearance
ii. TANC will perform annual field reconnaissance of the ROW to identify areas that need treatment.	*Section 3.1- Aerial inspections will be conducted every 6 months; ground inspections will be performed on a 5 year basis*
b. Vegetation removal	
i. Emergency trees	Sections 3.1.1 and 3.1.2- Aerial and Ground Inspections for "hazard" trees; Appendix F
ii. Annual hazard reduction plan	Appendix F
iii. Limited operating periods	Appendix F
c. Timber treatment	Appendix F
d. Fuels treatment	Section 3.2.1.1
5) Fire Plan	Section 4; Appendix F
6) Environmental Requirements	
a. Air/Soil/Water Quality	
i. Erosion control will be a primary concern in protecting and maintaining water quality.	
(1) Operation activities will be performed to minimize erosion, sedimentation, and compaction. (2)	Geology and Soils SOP- "*All construction must be in conformance with Western's Erosion Control and Revegetation Plan."*
(3) Activities will minimized during winter and other wet periods.	Geology and Soils SOP
(4) Normal operating season is April 15- Nov 15 except for reconnaissance activities; permission is needed to operate outside this period.	*Not specifically identified*
(5) Standard techniques for controlling water runoff on access roads will be used.	Section 3.2.2.2- Culvert and Ditch Specifications Water Resources SOP

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
(6) Water bars, cross ditches, etc. will be maintained to standards set by Forest Service.	Section 3.2.2.2- Culvert and Ditch Specifications; Appendix E
ii. Additional Mitigations from COTP FEIS/EIR	
(1) TANC will adhere to entities having jurisdiction over air quality matters and obtain construction permits.	Air Quality SOP
(2) Burning will not be allowed unless permitted.	Air Quality SOP
(3) Existing roads will be repaired to condition prior to damage.	Section 3.2.2.6- Repairing Damaged Access Roads
(4) Disturbed solid around tower bases will be rehabilitated and reseeded (if topsoil replaced).	Geology and Soils SOP states "All work areas should be left in a condition that facilitates natural vegetation…"
(5) Run-off control structures, etc. will be cleaned, maintained, repaired, and replaced whenever necessary.	Section 3.2.2.1- Clearing Culverts and Ditches; Section 3.2.2.4- Repairing Road Structures; Water Resources SOP
(6) Road access will be negotiated with landowners…for mining and mineral extraction.	*Not included*
(7) Buffer of undisturbed vegetation shall be maintained along all lakes and streams.	*Water Resources PCM prohibits many activities within 100 feet of lakes and streams*
(8) Stream crossings will permit fish to pass and reduce the potential for increased scour, washout, etc.	Water Resources PCM
(9) New stream crossings will be built at approximate right angles to streams.	Water Resources PCM
b. Wildlife / Botany	
i. Special measures are needed in locations of areas of threatened or endangered animals.	Special-status Wildlife and Fish PCM
(1) Operation activities may be limited or additional surveys may be required in these areas.	Special-status Wildlife and Fish PCM
(2) TANC will submit a request to USFS if it believes it must take an action within a limited operating period or habitat area.	Section 6.3- Changes to PCMs
(3) Limited Operating Period and Tower Numbers are listed by Species. (see Section VI, page 11)	Table 6-2- *however dates differ and tower numbers not included*
(4) If protection measures inadequate… USFS may unilaterally modify this Operations and Maintenance Plan.	*Not included*
(5) Discovery of such areas by either party shall be promptly reported to other party.	*Not specifically included, however Section 3 states "Western will update the GIS system once a year to include new resources listed by USFWS or other appropriate agencies"*
ii. Additional mitigations from COTP FEIS/EIR	
(1) Habitat diversity will be maintained on rights-of-way through forested areas.	*Not specifically included*
(2) New snags will be created to offset losses.	Biological Resources SOP- *states recommended goals for snag creation (rather than for offsetting losses)*
c. Cultural Resources	
i. O&M Requirements	

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
(1) Wheeled or track-laying equipment shall not be operated within the boundaries of archeological sites except on roads, etc.	Cultural Resources SOP
(2) Forest Service will review the annual Hazard Reduction Plan notify TANC of known cultural sites	*Not specifically identified*
(3) If necessary, sites will be flagged for avoidance by USFS prior to hazard reduction work.	Cultural Resources PCM
(4) Special clearing treatments may be required.	Cultural Resources PCM
(5) Unless agreed otherwise, trees will not be felled in sensitive cultural resource areas.	Cultural Resources PCM- "only manual and/or hand clearing of vegetation, chip/broadcast disposal of cut vegetation" are allowed
(6) TANC may be required to backblade skid trails in lieu of cross ditching.	*Not included*
ii. Additional Mitigations from COTP FEIS/EIR	
(1) Impacts to cultural resources will be mitigated by avoidance whenever possible.	Cultural Resources PCM
(2) Steps listed in the Memorandum of Agreement (contained in Appendix H) will be taken.	*Not included*
d. Hazardous materials	*Not included*
i. Definitions	
(1) Oil	*Not included*
(2) Hazardous substances	*Not included*
(3) Hazardous spill	*Not included*
ii. Discovery and Notification	*Not included*
(1) Discovery of, or accidental discharge, of significant amount shall be immediately reported.	*Not included*
(2) TANC shall clean up or otherwise remediate any release…whether or not those activities are authorized.	*Not included*
(3) TANC will perform cleanup immediately upon discovery and at no expense to the government.	*Not included*
(4) At termination, TANC shall deliver Project Area free and clear of contamination to the USFS.	*Not included*
iii. Storage of Hazardous Materials	*Not included*
(1) TANC will not store hazardous materials without obtaining approval, which shall not be unreasonably withheld.	*Not included*
(2) Approval from the state and/or county will be requested when required.	*Not included*
(3) Any request for hazardous materials storage will require an Emergency Response Plan, Health and Safety Plan, and Spill Plan.	*Not included*
(4) For any storage, the holder shall deliver and maintain a surety bond	*Not included*
iv. Spill prevention control and countermeasure plan	*Not included*
(1) If oil/oil product storage exceeds given volume, TANC will prepare Spill Prevention Control and Countermeasure Plan.	*Not included*
v. Certification upon revocation and termination	*Not included*
(1) TANC shall provide USFS with report determining if Project Area has been contaminated, or if there has been release/discharge.	*Not included*

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
(2) Professional shall document and certify remediation and compliance with laws.	*Not included*
e. Health and Safety	
i. TANC shall take all measures necessary to protect the environment, natural resources, and health and safety of persons affected by use and occupancy of the Easement.	*Public Health SOP- "All applicable health and safety standards shall be complied with."*
(1) Any activity/procedure that threatens to cause a hazard, harm, or damage will be promptly abated.	*Not specifically included*
(2) TANC will immediately notify authorized officer of all serious accidents.	*Not included*
(3) TANC has sole responsibility for health and safety of all persons affected by COTP activities within the Easement.	*Not included*
(a) USFS has no duty to inspect the activities or facilities for hazardous conditions or compliance with health and safety standards.	*Not included*
ii. Additional mitigations from COTP FEIS/EIR	
(1) Toxic material will not be released in any lake or water drainage.	*Public health SOP- "Hazardous materials shall not be drained onto the ground, into streams, or into drainage areas."*
(2) All work will be consistent with laws and regulations relating to safety, water quality, and public health.	Public Health SOP
(3) Radio and television interference complaints will be investigated and corrected.	*Not included*
(4) Reasonable mitigations will be applied to correct problems of Project induced currents and voltages.	*Not included*
(5) Flammable vegetation will be removed a minimum of 30 feet from towers and conductors.	Public Health SOP
(6) Cleared vegetation will be disposed in an appropriate manner subject to regulations.	Public Health SOP
(7) Construction vehicles will be equipped with spark arresters and fire-fighting equipment.	Section 4.3.3; Public Health SOP
(8) Herbicides not used until permission is obtained from landowners/managers.	*Section 3.2.1.3- "All herbicide use will be approved by the individual agencies based on herbicide use proposals that will be submitted by Western annually."*
(9) There will be no aerial application of herbicides.	Public Health SOP
(10) Herbicides will be used to hand treat stumps that could potentially interfere with conductors.	Section 3.2.1.3
(11) Limited amounts will be used to control unwanted plant growth within substation areas.	*Not included*
(12) All herbicide regulations will be strictly adhered to including:	
(a) Use of licensed and/or registered herbicide applicators.	Public Health SOP
(b) Use of herbicides in agricultural or urban areas as specified through permit system	*Public Health SOP- "Herbicide-free buffer zones shall be maintained as per label instructions if using herbicides near crops for consumption."*
(c) Proper storage requirements	*Not included*
(d) Proper use in accordance with most current label	Public Health SOP
f. Supplemental environmental review	

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
i. Supplemental review will be completed for any proposal of new construction/re-construction under requirements of CEQA and NEPA	*Not included*
7) Roads	*Section 3.2 discusses general road maintenance, but does not cover restrictions or use of specific roads*
a. Introduction	
i. Road use will be limited to roads identified in Appendices C.1 and C.2	*Not included*
ii. TANC will contact USFS to amend Easement or obtain supplemental Road Use Permit.	*Not specifically included, however Section 2.3 states modifications and/or changes to the O&M Plan will be initiated at the request of Western or the USFS*
iii. Vehicles limited to < 1 ton; restrictions apply for larger vehicles.	*Not included*
iv. TANC will maintain roads to levels and specifications given in Appendix H.	*Not included*
v. TANC will repair/correct damage to roads.	Section 3.2.2.4
b. Normal Operating Season	
i. There will be time period restrictions on certain Easement roads.	*Not included*
ii. Normal operating season will be April 15 to Nov. 15.	*Not included*
iii. Road use fees will triple outside of this season.	*Not included*
c. Road Maintenance Requirements	
i. The Forest service may:	*Not included*
ii. Close/restrict road use when … unrestricted use would cause extensive damage, or create hazardous conditions.	*Not included*
iii. Close roads during periods of extraordinary fire danger	*Not specifically included, however Section 4.3.1 states that "Western may require cessation of operations" in extreme fire conditions*
iv. Install traffic controls.	*Not included*
v. Prohibit operation of vehicles with cleats or other surface damaging tracks.	*Not included*
vi. Restrict use of an "active ingredient."	*Not included*
d. Snow Removal Requirements	
i. Snow removal by TANC should be done in a manner to preserve and protect the roads, etc.	*Not included*
ii. Snow removal work may include: (11 items listed)	*Not included*
e. Other Mitigations from COTP FEIS/EIR	
i. Clearing should be done with irregular edge, and a harsh right-of-way should be avoided.	*Not included*
ii. Compliance with laws/regulations for protected species will be monitored.	Section 6.2- *"Compliance with all applicable PCMs will be included in the contract of each maintenance contractor."*
iii. Retention or encouragement of native vegetation will be a goal for tower sites.	*Not included*
iv. Vegetation diversity will be maintained on rights-of-way through forested areas.	*Not included*
v. Disturbance of rare forest vegetation sites will be minimized.	*Not included*

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
vi. Mitigation of unavoidable adverse impacts to wetlands will be developed in terms of US Fish and Wildlife policy.	Water Resources PCM
vii. Precautions will be taken to protect surveying monuments and property corners.	*Not included*
viii. COTP participants/contractors will comply with all conditions imposed upon use of existing roads by managing agencies.	*Not included*
ix. Directional felling will be used to minimize damage to trees.	
x. Visual buffers will be retained.	Esthetics SOP
xi. Visibility of substation and communication sites from roads, etc. will be minimized.	*Not included, however Esthetics SOP states that visibility of material and construction storage areas should be minimized*
Appendix A- Project Maps	Section 1.1 and Section 7
Appendix B- Limited Operating Periods/Survey and Managed Species/Sensitive Species List	
1) Limited operating period dates	*By A, B, and C activity categories-*
a) Bald eagle- Jan. 1 to Aug. 1	*A: Follow SOPs* *B and C: Feb. 1 to Aug. 15*
b) Northern spotted owl- Feb. 1 to July 10	*A: Follow SOPs* *B:* Feb. 1 *to July 31* *C: follow measures for A and B*
c) Goshawk- Feb. 15 to Aug. 15	*A: follow SOPs* B and C: Feb. 15 to Aug. 15
d) Osprey- Apr. 1 to Aug. 1	*A: Follow SOPs* *B and C: April 15 to Aug. 31*
e) Pronghorn kidding area- April 15 to June 30	*Specie not listed under PCM*
f) Deer winter range- April 15 to June 30	*Specie not listed under PCM*
g) Swainson's hawk- May 1 to Aug. 15	*A, B, and C: April 1 to July 31*
2) NW Forest Plan Survey and Manage and Protection Buffer Species List	Exempt from O&M Operations
3) Sensitive and Endemic Plant Species	*Not included*
Appendix C- Fuel Treatment Requirements	
1) Chipping	Section 3.2.2.1; Appendix F
2) Decking	Appendix F
3) Lopping and scattering	Appendix F
4) Piling	Section 3.2.2.1; Appendix F
5) Construction and size of piles	Appendix F
6) Location of piles	Appendix F
7) Piling season	Appendix F
Appendix D- COTP Activity Restrictions/Requirements	
1) TANC shall provide continuous emergency vehicle access.	*Not included*
2) Each vehicle shall be equipped with specified fire extinguisher, shovel, and axe or Pulaski.	Section 4.3.4- "All equipment… will be equipped with a shovel, water pump, and fire extinguisher," *however specifications not given*
3) Water truck will be available for use as specified.	Section 4.3.2- Water Supply for Fire Fighting
4) Tool cache will be provided and maintained as specified.	*Not included*

Comparison of O&M Requirements

Updated 2000 COTP O&M (TANC)	New 2010 O&M Plan
5) Blasting, welding, spark arrester, lunch and warming fires, smoking, warning devices, parking and storage areas, and refueling will be permitted or prohibited as specified.	Spark arresters covered by Section 4.3.3 and Public Health SOP, *but other activities not included*
Appendix E- Duties of Fire Guard	
1) 11 items listed	Section 4.3.1- *however specifications not given*
Appendix F- Fire Call Directory	Section 4.1 Fire Call Directory
Appendix G- Fire Danger Rating Classes and Precaution Measures	Section 4.3 discusses fire risk and conditions in general*, but does not give specific fire ratings or precaution measures*
1) Fire danger rating classes	
a) Hoot Owl restrictions, red flag restrictions, closure and restrictions	*Not included*
2) Fire precaution measures	
b) Description of precautions by fire danger rating	*Not included*
Appendix H- Right of Way Exhibit	

PROJECT OPERATION AND MAINTENANCE AGREEMENT

CALIFORNIA-OREGON TRANSMISSION PROJECT

OPERATION AND MAINTENANCE AGREEMENT

MARCH 1993

CALIFORNIA-OREGON TRANSMISSION PROJECT

OPERATION AND MAINTENANCE AGREEMENT

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CALIFORNIA-OREGON TRANSMISSION PROJECT
OPERATION AND MAINTENANCE AGREEMENT

1. PARTIES

For purposes of this Agreement, the Parties to this Agreement are the signatories to this Agreement and may include: the Transmission Agency of Northern California (Agency), a Joint Powers Agency; the Western Area Power Administration (Western); the City of Vernon (Vernon), a municipal corporation of the State of California; the Southern San Joaquin Valley Power Authority (Southern San Joaquin), a Joint Powers Agency; Shasta Dam Area Public Utility District (Shasta); Carmichael Water District (Carmichael); San Juan Suburban Water District (San Juan); and the California Department of Water Resources (DWR).

2. PURPOSE

This Agreement more specifically provides for the conduct and payment for the operation and maintenance of the Project as generally set forth in the LTPA. At the time of the negotiations of this POMA, the LTPA has not become effective, but the Management Committee has approved the LTPA with less than unanimous approval. If the LTPA becomes effective and there are any inconsistencies between this Agreement and the LTPA, this Agreement shall control unless the LTPA specifically references a section of this Agreement and states that the LTPA controls as to that section. If the LTPA does not become effective, this Agreement shall remain in effect until terminated by agreement of the Parties or until the Operating Agent resigns pursuant to Section 6.1.1.

3. AGREEMENT

In consideration of the mutual covenants and conditions herein, the Parties agree as follows.

4. DEFINITIONS

Whenever used in this Agreement, the following terms, when initially capitalized, shall have the following meanings. The singular of any definition shall include the plural and

the plural shall include the singular. Capitalized terms which appear only in this Section 4 are not defined here, but shall have the same meanings as those defined and used in the IPA or the LTPA, whichever is effective.

4.1 Addition

A new facility, together with its associated Land Rights, other than a Betterment or Replacement, that is added to the Project.

4.2 Available COTP Transfer Capability

The maximum Transfer Capabilities of the Project and of its Segments, available under operating conditions existing at a given time.

4.3 Capital Improvement

Any Addition or Replacement the cost of which exceeds two hundred fifty thousand dollars ($250,000) or such other amount which the Management Committee may establish from time to time, or a Betterment.

4.4 Capital Improvement Costs

The costs of Capital Improvement Work.

4.5 Capital Improvement Work

All activities, authorized or ratified by the Management Committee, necessary or useful for the planning, engineering, acquisition, installation, and testing of a Capital Improvement.

4.6 Commercial Operation Dates

The dates established by the Management Committee upon which the Project or a Segment thereof is available for commercial use.

4.7 Communication Facilities

Those Land Rights, equipment, and facilities included in Project Work, necessary and useful to monitor the status and to maintain control of the Project's operation, including microwave communication repeaters and repeater sites.

4.8 Cost Sharing Percentage

Those percentages which reflect each Participant's obligation to pay Project Costs.

4.9 COTP

The California-Oregon Transmission Project (Project).

4.10 Curtailment

A temporary reduction in a power schedule due to a temporary reduction in Transfer Capability.

4.11 CVP Upgrade Segment

The 500-kV AC transmission line between the Olinda Substation and the Tracy Substation Expansion.

4.12 EIS/EIR

The final Environmental Impact Statement/Environmental Impact Report for the California-Oregon Transmission Project and the Los Banos-Gates Transmission Project, (EIS/EIR); DOE/EIS-0128, SCH#.85040914, January 1988.

4.13 Electric System

All properties and assets that are owned by any entity, including any interests in Joint Powers Agency facilities, and that are used for or pertain to the generation, transmission, transformation, distribution or sale of electric power and energy, including all additions, replacements, extensions, expansions, improvements, and betterments thereto, and equipment associated therewith. To the extent an entity is not the sole owner of an asset or property, only that entity's ownership interest in such asset or property shall be considered to be part of its Electric System.

4.14 Engineering & Operations Committee (E&O Committee)

A committee operating under the direction of the Management Committee which provides a technical forum among the Participants.

4.15 Entitlement

A Participant's right to use its portion of the Rated COTP Transfer Capability, expressed as a percent.

4.16 FERC

The Federal Energy Regulatory Commission, or its regulatory successor.

4.17 Interest Charge

That charge against unpaid amounts due and owing, assessed at an annual interest rate compounded monthly equal to the lesser of the following amounts: two percent (2%) plus the applicable first of the month reference rate of the Bank of America N.T. & S.A., San Francisco, California, or its successor, corresponding to the period during which the payment is overdue; or the maximum interest rate permitted by law.

4.18 Interim Participation Agreement (IPA)

That agreement among the Participants dated September 30, 1991.

4.19 Investor-Owned Utilities

The Pacific Gas and Electric Company, the Southern California Edison Company, and the San Diego Gas & Electric Company.

4.20 Joint Powers Agency

A public entity organized under the provisions relating to the joint exercise of powers contained in Chapter 5, Division 7, Title 1 of the Government Code of the State of California, as it may be amended from time to time.

4.21 Long-Term Participation Agreement (LTPA)

The California-Oregon Transmission Project long-term participation agreement among the Participants, which supersedes the IPA upon execution of the LTPA by all the Parties.

4.22 Management Committee

The committee established by the IPA or LTPA, whichever is effective, for the purpose of securing effective managerial and policy direction, cooperation, and interchange of information, and of providing decisions and consultation, on a prompt and orderly basis among the Participants, in connection with the Project.

4.23 Maxwell Compensation Station

The 500-kV AC series compensation station located near Maxwell, California.

4.24 Northern Segment

The 500-kV AC transmission line from the Captain Jack Substation located near the California-Oregon border to the Olinda Substation located near Redding, California.

4.25 Olinda Substation

The 500/230-kV AC substation located near Redding, California.

4.26 Operating Agent

The entity selected by the Participants or the Management Committee to perform the duties of the Operating Agent in accordance with this Agreement.

4.27 Operating Emergency

An unanticipated and unplanned event or circumstance which exists or poses an imminent threat to the System, the Project, or the Pacific AC Intertie, and which impairs or threatens to impair the safe and reliable operation of the System, the Project, or the Pacific AC Intertie, provided, that none of the following shall be considered an Operating Emergency: insufficient prime-mover energy source, scheduled maintenance, uneconomic dispatch of energy resources, or a contractual dispute.

4.28 Operation and Maintenance Budget and Work Plan

A projection of Operation and Maintenance Work and Operation and Maintenance Costs.

4.29 Operation and Maintenance Costs

The costs of Operation and Maintenance Work.

4.30 Operation and Maintenance Work

All activities, authorized in an Operation and Maintenance Budget and Work Plan, or approved or ratified by the Management Committee, and which are necessary or useful for the safe, reliable, coordinated operation and maintenance of the Project.

4.31 Pacific AC Intertie

That portion of the two (2) 500-kV AC transmission lines from and including the Malin Substation near the California-Oregon border and to and including the Midway

Substation near Bakersfield, California.

4.32 Participant

For purposes of this Agreement only, an entity which has Entitlement in the COTP.

4.33 Project

The California-Oregon Transmission Project which consists of Land Rights, transmission lines, substations, and related facilities, including, but not limited to, the following major elements plus all Replacements, Additions, and Betterments: Northern Segment, Olinda Substation, CVP Upgrade Segment, Maxwell Compensation Station, Tracy Substation Expansion, Tesla By-Pass Segment, metering, and Communication Facilities.

4.34 Project Agreements

The Interim Participation Agreement (IPA); the Long-Term Participation Agreement (LTPA); this Agreement; a Western interconnection agreement; the Interim Northwest Interconnection Agreement; a long-term Northwest interconnection agreement; and other agreements between Parties necessary for the construction, operation, maintenance, and improvement of the Project; and agreements between the Participants and other entities, or among the Participants, necessary to provide for coordinated and parallel operation and interconnection of the Project with the Pacific AC Intertie; all as may be amended or superseded from time to time.

4.35 Project Costs

All costs of Project Work.

4.36 Project Funds

All funds related to Project Work.

4.37 Project Manager

The Agency, or its successor.

4.38 Project Operation and Maintenance Agreement (POMA)

This Agreement which provides for the operation and maintenance of the Project.

4.39 Project Work

All work necessary and useful for: (1) completing the Project in accordance with the Project Plan of Service and Prudent Utility Practice; (2) preparing for its effective operation, maintenance, and use; (3) making necessary and desirable improvements to the Project including Capital Improvements; (4) operating or causing the operation of the Project; (5) maintaining or causing the maintenance of the Project; and (6) providing for the technical and administrative activities for the Project.

4.40 Prudent Utility Practice

Those practices, methods and procedures, as modified from time to time, that are currently and commonly used by electric utilities to design, engineer, select, construct, operate, and maintain electric power facilities and equipment dependably, reliably, safely, efficiently, and economically, with due regard to the state of the art in the electric power industry.

4.41 Rated COTP Transfer Capability

The Transfer Capability of the Project, specified in each direction, initially established at the California-Oregon border to be 1600 megawatts in the north to south direction and 1225 megawatts in the south to north direction, and as the Management Committee may determine from time to time for the Project or any Segment.

4.42 Replacement

A new component, other than an Addition or a Betterment, substituting for another such comparable component which no longer adequately performs its function or which has expended its useful life, irrespective of whether the replacement results in an incidental increase in Rated COTP Transfer Capability at the California-Oregon border.

4.43 Segment

The portions of the Project which are initially designated and defined as the Northern Segment, the CVP Upgrade Segment, and the Tesla By-Pass Segment.

4.44 System

The Project and the Pacific AC Intertie.

4.45 Tesla By-Pass Segment

The double-circuit 500-kV AC transmission line between the Tracy Substation Expansion and a location described as tower No. 38, which intercepts the Pacific AC Intertie on PG&E's 500-kV transmission line exiting south from Tesla Substation to Midway Substation.

4.46 Tracy Substation Expansion

The 500/230-kV AC substation facilities, including the associated Land Rights, located near Western's existing Tracy Substation.

4.47 Transfer Capability

The ability of electric power transmission facilities and related facilities to transmit electric power between two locations, specified separately for each direction between such locations, and expressed in megawatts.

5. EFFECTIVE DATE, TERM, AND TERMINATION

5.1 Effective Date

This Agreement shall be effective and binding upon those signatories hereto which have received the required approval to enter into this Agreement when executed by at least TANC and Western, provided that no Participant shall have the rights under this Agreement until such Participant executes this Agreement.

5.2 Term and Termination

This Agreement shall terminate on the date upon which the LTPA terminates without a successor which includes Western or its successor as a Party. Upon termination, any rights provided in accordance with this Agreement shall cease, and any obligations previously incurred in accordance with this Agreement, including an obligation to pay money for services received, shall be preserved until satisfied.

6. OPERATION AND MAINTENANCE WORK

6.1 Designation, Resignation, and Replacement of An Operating Agent

Western is hereby designated as the Operating Agent for the Project until otherwise determined by the Management Committee and shall perform the duties and responsibilities of the Operating Agent, in addition to Western's other responsibilities, set forth in this Agreement. As the Operating Agent, Western shall fulfill the duties specified herein pursuant to Section 25.

6.1.1 Resignation

If at any time during the term of this Agreement the Operating Agent determines that it will no longer perform the duties of the Operating Agent, it may resign from the role of Operating Agent by giving notice to each of the Participants of its intention to resign no less than six (6) months prior to the date upon which the resignation is to take effect. The resigning Operating Agent will cooperate in all reasonable actions undertaken by the Management Committee to secure a replacement Operating Agent and shall cooperate in all reasonable activities required to transfer its duties, obligations, and responsibilities to the replacement Operating Agent.

6.1.2 Replacement

If at any time during the term of this Agreement, the Management Committee determines that the performance of the Operating Agent is unsatisfactory, the Operating Agent may be replaced by the Management Committee.

6.2 Responsibilities and General Authority

6.2.1 Operating Agent

The Operating Agent shall be responsible for the Operation and Maintenance Work required to physically operate the Project in parallel with the Pacific AC Intertie and interconnected with the PG&E Electric System and to take such actions as are necessary and proper to ensure that

the Project is operated and maintained in a safe, efficient, and reliable manner to maximize the use of Parties' Entitlements. The Operating Agent shall cooperate and coordinate with Western and the Project Manager in the conduct of its Operation and Maintenance Work.

6.2.2 Western

Western shall be responsible for the Operation and Maintenance Work for the CVP Upgrade Segment, for the Olinda Substation, for the Maxwell Compensation Station, for the Tracy Substation Expansion, and for certain Communications Facilities associated therewith. Western shall cooperate and coordinate with the Operating Agent and the Project Manager in the conduct of its Operation and Maintenance Work.

6.2.2.1 CVP Upgrade Segment

Western's responsibility for Operation and Maintenance Work on the CVP Upgrade Segment shall include all elements of the Project from and including the insulators on the line-side of the Olinda Substation 500-kV dead-end structure to and including the insulators on the line-side of the Tracy Substation Expansion 500-kV dead-end structure, and including all Project equipment and facilities located at the Maxwell Compensation Station.

6.2.2.2 Olinda Substation

Western's responsibility for Operation and Maintenance Work at the Olinda Substation shall include all 500-kV equipment and facilities from and including the 500-kV dead-end structures on the Northern Segment and CVP Upgrade Segment to and including the 230-kV bushings on the 500/230-kV transformers, and including all 500-kV related equipment and facilities located in the Olinda Substation. Any maintenance and operation of any 230-kV related equipment and facilities located in the Olinda

Substation shall not be Operation and Maintenance Work in accordance with this Agreement.

6.2.2.3 Tracy Substation Expansion

Western's responsibility for Operation and Maintenance Work at Tracy Substation Expansion shall include all 500-kV equipment and facilities from and including the 500-kV dead-end structures on the CVP Upgrade Segment and Tesla By-Pass Segment to and including the 230-kV bushings on the 500/230-kV transformers, and including all 500-kV related equipment and facilities located in the Tracy Substation Expansion. Any maintenance and operation of any 230-kV related equipment and facilities located in the Tracy Substation and Tracy Substation Expansion shall not be Operation and Maintenance Work in accordance with this Agreement.

6.2.2.4 Communication Facilities

Western's responsibility for Operation and Maintenance Work on Communication Facilities shall include all such facilities of the Project located at each of the following sites: 1) Olinda Substation; 2) Maxwell Compensation Station; 3) Tracy Substation Expansion; 4) Elverta; and 5) Western's Sacramento Area Office Dispatch Center.

6.2.3 Project Manager

The Project Manager shall be responsible for the Operation and Maintenance Work for the Northern Segment, for the Tesla By-Pass Segment, and for Communication Facilities associated therewith. The Project Manager shall cooperate and coordinate with the Operating Agent and Western in the conduct of its Operation and Maintenance Work.

6.2.3.1 Northern Segment

The Project Manager's responsibility for Operation and Maintenance Work on the Northern Segment shall include all elements of the Project from and including tower No. 634 near the California-Oregon border to and including the insulators on the line-side of the Olinda Substation 500-kV dead-end structure associated with the Northern Segment.

6.2.3.2 Tesla By-Pass Segment

The Project Manager's responsibility for Operation and Maintenance Work on the Tesla By-Pass Segment shall include all elements of the Project from the point of change of ownership of PG&E's Electric System to and including the insulators on the line-side of the Tracy Substation Expansion 500-kV dead-end structures associated with the 500-kV transmission lines which connect the Tracy Substation Expansion to PG&E's Tesla and Los Banos Substations.

6.2.3.3 Communication Facilities

The Project Manager's responsibility for Operation and Maintenance Work on Communication Facilities shall include all such facilities of the Project located at each of the following sites: 1) Timber Mountain; 2) Happy Camp; 3) Widow Mountain; 4) Big Valley; 5) Bear Spring; 6) Manzanita; 7) Hooker; 8) Round Mountain; 9) Corning; 10) Logan Creek; 11) Sites; 12) Rumsey; 13) Berryessa Peak; 14) Davis; 15) Elk Grove; 16) Sugarloaf; 17) Pixley; 18) Vollmer; 19) Highland Peak; 20) Skeggs Point; 21) Mount Oso; 22) Pacheco Peak; and any other site that is not the operation and maintenance responsibility of Western.

6.3 Work Standards

All Operation and Maintenance Work shall be performed in accordance with Prudent Utility Practice, this Agreement, the Project Agreements, any relevant guidelines, policies, and procedures approved by the Management Committee, and any applicable laws, regulations, orders, permits, leases, and licenses now or hereafter in effect or lawfully imposed by any governing authority. All Operation and Maintenance Work shall be performed in a manner which minimizes disruption of the Parties' Entitlements and other Project operations. For all Operation and Maintenance Work which is scheduled or planned to cause a sustained interruption of Project facilities, a plan shall be submitted by the Operating Agent, through the Project Manager, to and approved by the Management Committee prior to the implementation of such Operation and Maintenance Work. In the event of an Operating Emergency, the Operating Agent or Western, as applicable, shall immediately act to eliminate the cause or minimize the effect of such Operating Emergency, to the reasonable extent of its ability, and shall immediately act to restore normal operation of the COTP in coordination with the Pacific AC Intertie.

6.4 Specific Duties and Responsibilities

6.4.1 Operating Agent

The Operating Agent shall perform the activities for Project operations, and shall coordinate Operation and Maintenance Work on Segments maintained by Western and the Project Manager, and, in conjunction with Western and the Project Manager, shall perform the following specific duties in addition to those general duties set forth in Section 6.5:

6.4.1.1 Coordination of Entitlements

Coordination and implementation of the Parties' Entitlements in accordance with the LTPA, procedures approved and adopted by the Management Committee, and a coordinated operations agreement, as the latter may be modified from time to time or

superseded.

6.4.1.2 Curtailment Activities

Arrange for procedures that provide that all Curtailments be implemented on a pro-rata basis. In the event of a Curtailment resulting from an outage, loop flow, exceedance of nomogram limits, or an Operating Emergency on the Project, or any Segment, notify the Parties as soon as practicable, of: (1) the occurrence, cause, and nature of such operating constraint and Curtailment; (2) the steps being taken to mitigate or terminate such operating constraint and Curtailment; (3) the amount of any reduction of the Parties' Entitlements resulting from the Curtailment; and (4) the expected duration of the operating constraint and Curtailment. Such notification shall conform to the requirements of Appendix A to this Agreement. In mitigating or terminating such operating constraint and Curtailment, the Operating Agent shall coordinate and cooperate with any entity responsible for the operation and maintenance of System facilities;

6.4.1.3 Curtailment Reporting

As soon as practicable after a Curtailment, and during an extended Curtailment, unless otherwise agreed, prepare and submit to the Parties a Curtailment report, via an electronic bulletin board, or equivalent, to be updated regularly and include, at a minimum, the following data:

6.4.1.3.1 The nature, cause, and duration or probable duration of the Curtailment;

6.4.1.3.2 The actions taken by the Operating Agent and operators of interconnected Electric Systems in

response to the Curtailment;

6.4.1.3.3 The Available COTP Transfer Capability during the Curtailment;

6.4.1.3.4 The amount of the reduction of Entitlement imposed on each Party during the Curtailment; and

6.4.1.3.5 Any additional data which the Management Committee or the Operating Agent determines is useful in confirming that the burdens of the Curtailment were shared in accordance with this Agreement.

6.4.1.4 Records of Curtailments

Keep and maintain accurate records of all Curtailments, the reason(s) therefore, the starting and ending times, and the magnitude of all transfer capability reductions. Such records shall be submitted monthly to the Project Manager and kept and maintained in accordance with Section 13;

6.4.1.5 Scheduled Outages

In coordination with Western, the Project Manager, and the operators of interconnected Electric Systems, and in accordance with the guidelines contained in Appendix C to this Agreement, obtain approval from the Management Committee for scheduled outages for maintenance, inspection, or other purposes on the Project and for all pre-arranged outages, provided, that the Operating Agent shall be excused from this requirement only in the event that a scheduled outage is required prior to the convening of the Management Committee during which time there exists imminent danger of an Operating Emergency but for such scheduled maintenance, provided further, that the

Operating Agent shall notify the Project Manager and Western of such scheduled maintenance concurrently and immediately upon determining the need for such scheduled maintenance;

6.4.1.6 Power Flow Monitoring

Continuously monitor and record information on power flows on the Project and the Pacific AC Intertie and provide the Parties with information on such power flows in accordance with guidelines approved by the Management Committee;

6.4.1.7 Emergency Plans and Procedures

In coordination with Western and the Project Manager, prepare and recommend emergency plans and procedures and mutual aid agreements with other appropriate entities in accordance with the guidelines contained in Appendix C to this Agreement;

6.4.1.8 Interconnected Systems

Consult and cooperate with the operators of interconnected Electric Systems to minimize and otherwise address outages and other problems on Project facilities and interconnected Electric Systems in accordance with the guidelines contained in Appendix C to this Agreement. The Parties agree that they will make best efforts to negotiate or obtain FERC approval of provisions, whenever necessary, stating that the operator of the System is to make all emergency notifications of power schedule revisions or Curtailments directly to entities scheduling power on the COTP; and

6.4.1.9 Referrals to the Project Manager

Provide monthly and other periodic and special reports to the Project Manager detailing the progress and cost of Operation and Maintenance Work performed, and refer all matters requiring

review, approval, or action by the Management Committee to the Project Manager on a timely basis and provide the Project Manager with records and information which may be required to perform its responsibilities and to prepare recommendations to the Management Committee at least twenty (20) days prior to any Management Committee meeting.

6.4.2 Western

Western shall perform or cause the performance of all Operation and Maintenance Work for the CVP Upgrade Segment, for the Olinda Substation, for the Maxwell Compensation Station, for the Tracy Substation Expansion, and for certain Communications Facilities associated therewith, and shall coordinate such Operation and Maintenance Work with the Operating Agent and the Project Manager and shall perform the following specific duties in addition to those general duties set forth in Section 6.5:

6.4.2.1 Communication Facilities

Assure that the Communication Facilities sites set forth in Section 6.2.2.4 and all equipment associated therewith at each site are operated and maintained in accordance with general policies and procedures approved and adopted by the Management Committee; and

6.4.2.2 Referrals to Project Manager

Refer all matters requiring review, approval, or action by the Management Committee to the Project Manager on a timely basis and provide the Project Manager with reports, data, records, and information which may be required for it to perform its responsibilities and to prepare recommendations to the Management Committee at least twenty (20) days prior to any Management Committee meeting.

6.4.3 Project Manager

The Project Manager shall perform or cause the performance of the Operation and Maintenance Work for the Northern Segment, the Tesla By-Pass Segment, and Communication Facilities associated therewith, and shall coordinate such Operation and Maintenance Work with the Operating Agent and Western and shall perform the following specific duties in addition to those general duties set forth in Section 6.5:

6.4.3.1 Communication Facilities

Assure that each of the Communication Facilities sites set forth in Section 6.2.3.3 and all equipment associated therewith at each site is operated and maintained in accordance with policies and procedures approved and adopted by the Management Committee;

6.4.3.2 Insurance

Arrange for the placement and maintenance of insurance in accordance with Section 12;

6.4.3.3 Operation and Maintenance Budget and Work Plan

In cooperation with the Operating Agent and Western, annually prepare an Operation and Maintenance Budget and Work Plan in accordance with Section 7 for carrying out Operation and Maintenance Work under this Agreement and periodically prepare and submit revisions thereto, as necessary, to the Management Committee for approval; and

6.4.3.4 Referrals to the Management Committee

Refer all matters requiring review, approval, or action by the Management Committee to the Management Committee on a timely basis and provide the Management Committee with reports, data, records, and information which may be required

for it to perform its responsibilities.

6.5 Generally Applicable Duties and Responsibilities

The Operating Agent, Western, and the Project Manager each for its areas of responsibility, shall cooperate to perform or cause the performance of the following duties:

6.5.1 Reports

Comply with the provisions of Section 9 in preparing reports of Operation and Maintenance Work;

6.5.2 Access to Project Information and Records

Comply with the provisions of Section 13 in providing access to records of Project Operation and Maintenance Work and the retention and disposition thereof;

6.5.3 Personnel

Provide qualified, equipped, and trained personnel including, when appropriate, the employees of other Parties, contractors, consultants, attorneys, accountants, and others, to perform Operation and Maintenance Work;

6.5.4 Coordination with E&O Committee

Cooperate and coordinate with the E&O Committee in the development of recommendations for presentation to the Management Committee by the Project Manager for general operation and maintenance procedures for the Project;

6.5.5 Procurement

Obtain services, studies, equipment, apparatus, machinery, materials, tools, and supplies and maintain inventories of any necessary materials and supplies, including spare parts, in accordance with the provisions of Section 6.6 and Appendix B to this Agreement;

6.5.6 Diagnostic Testing

Perform periodic diagnostic testing of Project facilities to verify and document performance and to identify safety hazards. The records resulting from such testing shall be systematically reviewed and analyzed by the Operating Agent, Western, and the Project Manager to identify maintenance trends and to develop recommendations for presentation by the Project Manager to the Management Committee for its consideration in adopting or improving operation and maintenance procedures;

6.5.7 Inspection

Conduct periodic inspections and testing of all tools and equipment used in performing Operation and Maintenance Work to determine the suitability and condition of such tools and equipment;

6.5.8 Environmental Protection

Comply with all state and federal laws, regulations, permits, easements, leases, and licenses respecting environmental protection;

6.5.9 Fire Prevention

Adopt and implement adequate fire prevention programs and measures, in conjunction with existing agreements with the United States Forest Service and the California Department of Forestry, in the vicinity of all Project facilities and rights of way, including controlled burning, clearing, thinning, vegetation management, and posting;

6.5.10 Warranties

Require, obtain, and enforce any and all appropriate warranties on equipment, facilities, materials, and services utilized in Operation and Maintenance Work or installed as Project facilities; and

6.5.11 Other Duties

Prepare any procedures, guidelines, practices, lists, reports, schedules, budgets, and other information which the Management Committee directs

be prepared with respect to any aspect of the Operation and Maintenance Work undertaken in accordance with this Agreement.

6.6 Materials, Supplies, and Spare Parts

6.6.1 Those actions and work elements to be performed by the Project Manager, the Operating Agent, Western, and any Participant, as appropriately delineated in an approved Operation and Maintenance Budget and Work Plan, that involve the acquisition and inventory of materials, supplies, and spare parts necessary to maintain the safe, efficient, continuous, and reliable operation of the Project and all of its Segments in accordance with the Project Agreements and with procedures approved and adopted by the Management Committee shall include, at a minimum:

6.6.1.1 Arrangements for procurement, storage, and distribution of materials, supplies, and spare parts necessary for the maintenance of Project transmission line facilities;

6.6.1.2 Arrangements for the procurement, storage, and distribution of materials, supplies, and spare parts necessary for the maintenance of Project substation facilities; and

6.6.1.3 Arrangements for the procurement, storage, and distribution of materials, supplies, and spare parts necessary for the maintenance of Project Communication Facilities.

6.6.2 The spare parts inventory shall be maintained on a current basis and documented in accordance with the guidelines set forth in Appendix B to this Agreement.

6.7 Contracting Procedures

In performing or causing to be performed Operation and Maintenance Work and in constructing or causing the construction of Capital Improvements, the Operating Agent, Western, and the Project Manager, as appropriate, shall:

6.7.1 Recommend to the Management Committee the lowest responsive and responsible bidder when the services are competitively bid;

6.7.2 Evaluate the professional qualifications of each potential contractor in terms of its: (1) specialized experience and technical competence; (2) ability to perform the contract or effectuate the transaction within the time specified; (3) character, integrity, reputation, and experience; (4) past performance on similar contracts and compliance with performance schedules; (5) ability to provide future services, maintenance, and repair of parts for the services and supplies provided; and (6) lowest responsive and responsible prices and rates;

6.7.3 Comply with all applicable laws, rules, and regulations for safety and for protection of the environment, the mitigation measures and the requirements of the Project EIS/EIR, and in accordance with the terms and conditions of any applicable permits or licenses relating to the Project which are a part of, or a restriction stemming from, any lease, permanent easement, or joint use agreement;

6.7.4 Conduct or cause to be conducted tests, consistent with both Prudent Utility Practice and the plans and specifications approved by the Management Committee, to verify that the specified characteristics of equipment and facilities have been achieved and, if necessary, make or cause to be made modifications to meet the specified requirements thereof;

6.7.5 Approve or disapprove contract modifications to any competitive award contract for Operation and Maintenance Work which individually or cumulatively do not, or are not reasonably anticipated to, increase Operation and Maintenance Costs beyond those authorized in the annual Operation and Maintenance Budget and Work Plan approved by the Management Committee in accordance with Section 7;

6.7.6 Notify the Management Committee monthly of all contract modifications authorized in accordance with Section 6.7.5; and

6.7.7 If the approval of any contract modification would cause the amount of funds authorized for Operation and Maintenance Work in the current Operation and Maintenance Budget and Work Plan, including all available special allowances and contingency funds, to be exceeded, prior to making such an approval, submit such contract modification to the Project Manager for the purpose of making an appropriate recommendation to the Management Committee for approval.

7. OPERATION AND MAINTENANCE BUDGET AND WORK PLAN

7.1 Authorization

Beginning with the Commercial Operation Date of the Project or any Segment, the Operation and Maintenance Budget and Work Plan, prepared annually in accordance with this Section 7 and approved by the Management Committee, shall provide the Operating Agent, Western, and the Project Manager with the authorization to incur Operation and Maintenance Costs during that approved year. The total Operation and Maintenance Costs in the Operation and Maintenance Budget and Work Plan shall not be exceeded without a revision to the Operation and Maintenance Budget and Work Plan approved by the Management Committee.

7.2 Preparation and Approval

Prior to the Commercial Operation Date of the Project or any Segment, the Project Manager, in coordination with the Operating Agent and Western, shall prepare an Operation and Maintenance Budget and Work Plan for the first partial or full year of operation, and thereafter shall prepare or cause to be prepared an annual Operation and Maintenance Budget and Work Plan for each subsequent calendar year. Unless otherwise provided by the Management Committee, the Operation and Maintenance Budget and Work Plan shall be prepared in similar format and in at least the same detail as the July 1991 Construction Budget and Work Plan for the

Project and shall include budgets and work plans for all Operation and Maintenance Work elements, and for Capital Improvement Work elements that are for Additions or Replacements, identified and proposed to be performed on the Project during the upcoming year, provided that each Operation and Maintenance Budget and Work Plan shall contain specific statements of work for every major category of Operation and Maintenance Work. For the first full or partial year of operation, the Project Manager, in coordination with the Operating Agent and Western, shall submit a proposed initial Operation and Maintenance Budget and Work Plan to the Management Committee for review, modification, approval, or other action. For all subsequent years, ninety (90) days prior to the end of the preceding year, the Project Manager shall submit a proposed Operation and Maintenance Budget and Work Plan for the next subsequent year to the Management Committee for review, modification, approval, or other action.

7.3 Revisions

Any Party may recommend a revision to the Operation and Maintenance Budget and Work Plan at any time during the year. The Management Committee may direct revisions independently or in response to a Party's recommendation at any time. The Project Manager shall submit a proposed revision to the Operation and Maintenance Budget and Work Plan at the earliest reasonable date whenever the Operating Agent, Western, or the Project Manager anticipates that the total Operation and Maintenance Budget and Work Plan cost might exceed the amount reflected in the most recently approved or revised Operation and Maintenance Budget and Work Plan. No revision to an Operation and Maintenance Budget and Work Plan shall be effective until it has been approved by the Management Committee.

7.4 Additions and Replacements Budgets

Routine Additions and Replacements shall be included by the Project Manager in the annual Operation and Maintenance Budget and Work Plan, and shall be authorized by the Management Committee upon approval of such Operation and Maintenance

Budget and Work Plan.

8. COSTS OF OPERATION AND MAINTENANCE WORK

Costs and obligations incurred for Operation and Maintenance Work in accordance with an approved Operation and Maintenance Budget and Work Plan shall be Operation and Maintenance Costs, and shall be shared and paid according to the Cost Sharing Percentages set forth in Appendix E to this Agreement. Such Operation and Maintenance Costs shall include those expenses set forth in Sections 8.1, 8.2, and 8.3 for Operation and Maintenance Work, approved by the Management Committee in an Operation and Maintenance Budget and Work Plan, and to the extent that such expenses are auditable and properly accounted.

8.1 The following shall be considered Operation expenses:

8.1.1 Operation supervision, engineering, and system studies such as the labor and expenses incurred in the general supervision and direction of the operation of the Project and the System;

8.1.2 Project maintenance dispatching and scheduling activities such as the cost of labor, materials used, and expenses incurred in maintenance dispatching and scheduling activities pertaining to the Project;

8.1.3 Station operation expenses such as the cost of labor, materials used, and expenses incurred in operating the Project substations;

8.1.4 Transmission line operation expenses such as the cost of labor, materials used, and expenses incurred in operating the Project transmission line Segments;

8.1.5 Miscellaneous expenses, such as the cost of labor, materials used, expenses incurred in transmission map and record work, and other Project expenses not delineated elsewhere in this Section 8; and

8.1.6 Rents and leases, such as the cost of expenses of renting property from other parties when such property is used, occupied, or operated in connection with the Project, which shall include taxes, license and easement fees.

8.2 The following shall be considered Maintenance expenses:

8.2.1 Maintenance supervision and engineering, such as the cost of labor, materials used, and expenses incurred in the general supervision and direction of maintenance of the Project transmission line Segments;

8.2.2 Maintenance of structures, such as the cost of labor, materials used, and expenses incurred in the maintenance of 500-kV Project transmission line Segment structures;

8.2.3 Maintenance of station equipment, such as the cost of labor, materials used, and expenses incurred in the maintenance of Project station equipment, including Communication Facilities;

8.2.4 Maintenance of Project transmission line Segments such as the cost of labor, materials used, and expenses incurred in the maintenance of 500-kV Project transmission line Segments; and

8.2.5 Maintenance of miscellaneous Project transmission line facilities, such as the cost of labor, materials and vehicles used, and expenses incurred in maintenance of owned or leased transmission equipment or facilities, which are used directly or indirectly for the Project and are not provided for elsewhere in this Section 8.

8.3 Overhead expenses, associated with the direct labor of employees at various levels of supervision for Operation and Maintenance Work, and not charged directly in accordance with Sections 8.1 and 8.2, and not included in administrative and general expenses in accordance with Section 8.4, which are allocable to Operation and Maintenance Costs, provided that such chargeable overhead expenses shall be calculated in accordance with Appendix D to this Agreement.

8.4 Administrative and general expenses associated with the direct labor charged for Operation and Maintenance Work, including state and local fees, training expenses, and applicable labor loading charges on the portion of indirect or supervisory labor included in overhead, but excluding any such activities during commissioning and

energization of the Project, and not charged directly in accordance with Sections 8.1 and 8.2, and not included in overhead expenses in accordance with Section 8.3, which are allocable to Operation and Maintenance Costs, provided that such chargeable administrative and general expenses shall be calculated in accordance with Appendix D to this Agreement.

9. REPORTS

Unless otherwise directed by the Management Committee, the Project Manager, with the cooperation of the Operating Agent and Western, shall prepare and submit the following reports on all Operations and Maintenance Work activities:

9.1 Weekly Operation and Maintenance Reports

A "Weekly Operation and Maintenance Report" shall be prepared by the Project Manager, in coordination with the Operating Agent and Western, during periods of maintenance or overhaul of major Project facilities and substation equipment planned or expected to last longer than four (4) weeks, or extended beyond four (4) weeks, and made available to requesting Parties within three (3) working days following the end of each week. The "Weekly Operation and Maintenance Reports" shall include a description of all activities performed during the week, and the status of such activities for all transmission line segments, substations, and communication systems work. Any Party performing Operation and Maintenance Work shall provide in a timely manner to the Project Manager all information and data which is requested and is reasonably required by the Project Manager for the development of such "Weekly Operation and Maintenance Work Report," including but not limited to work plans, schedules, and estimates of Project Cost.

9.2 Monthly Operation and Maintenance Work Schedule, Status, and Cost Reports

An "Operation and Maintenance Work Schedule, Status, and Cost Report" shall be prepared by the Project Manager, in coordination with the Operating Agent and Western, and submitted to all Parties within twenty-five (25) days following the end of each month. Such monthly report shall, for all Operation and Maintenance Work

and for each Addition and Replacement activity, describe the activity on each transmission line segment, substation, and communication system facility of the Project performed during the prior month, and cumulatively, and the status and progress of such work, the costs of such work, and a summary comparison, including a discussion of the differences between planned work and actual work completed, and between expenditures forecasted in the Operation and Maintenance Budget and Work Plan and the costs actually incurred and paid during the same period. Such report shall also include, for all Operation and Maintenance Work and for each Addition and Replacement activity, schedules of manpower, material, and equipment, with milestones from which progress on planned activities is measured against actual activities, and from which prior month, and cumulative, variance analyses shall be prepared and presented within such report. All variances equal to or greater than ten percent (10%), for the prior month, or cumulative, shall be discussed in detail within the monthly report, noting all corrective actions planned or implemented to minimize or eliminate such variance. Each monthly report shall also contain a cumulative "Estimate to Complete" for all Operation and Maintenance Work identified in the approved Operation and Maintenance Budget and Work Plan. Each Party performing Operation and Maintenance Work shall submit to the Project Manager, within fifteen (15) days following the end of each month, all requested information and data reasonably required by the Project Manager for the development of such monthly "Operation and Maintenance Work Schedule Status Report".

9.3 Quarterly Claims, Liens, Settlement, and Awards Reports

A "Claims, Liens, Settlement, and Awards Report" shall be prepared by the Project Manager, in coordination with the Operating Agent and Western, and distributed to the Parties within thirty (30) days following the end of each quarter. Such quarterly report shall describe each claim, lien, settlement, stop notice, and award pertaining to Project facilities or any Party attributable to Operation and Maintenance Work

outstanding or incurred within the last quarter. Each Party shall, no later than ten (10) days following its receipt or notification, provide the Project Manager with information on claims, liens, stop notices, settlements, and awards pertaining to any Party, which claims, liens, stop notices, settlements, or awards are attributable to Operation and Maintenance Work.

10. BILLING AND PAYMENTS

10.1 Estimated Operation and Maintenance Costs

From the effective date of this Agreement, unless otherwise agreed by the Parties, all Operation and Maintenance Costs shall be paid in advance based upon costs estimated by the Project Manager, in coordination with the Operating Agent and Western, and shall be processed in accordance with Sections 10.2, 10.3, and 10.4.

10.2 Initial Invoice

To provide the initial funding of Operation and Maintenance Work to be performed in accordance with this Agreement, and to establish a prudent reserve in the event of an abnormal requirement for Operation and Maintenance Work, the Project Manager, in collaboration with the Operating Agent and Western, shall prepare and submit an initial invoice at least twenty (20) days prior to the commercial operation of the Project. Such initial invoice shall set forth the estimated funding required in accordance with the approved Operation and Maintenance Budget and Work Plan to pay the estimated costs for the first three (3) full months of the Project's operation, and shall set forth the proportion of such estimated funding requirement due and payable, computed in accordance with the Cost Sharing Percentages set forth in Appendix E to this Agreement.

10.3 Monthly Invoices

No later than the fifteenth (15th) day of the first month of operation, and by the fifteenth (15th) day of each month thereafter, the Project Manager, in collaboration with the Operating Agent and Western, shall prepare and submit invoices for the estimated Operation and Maintenance Costs projected to be incurred in the third

(3rd) month following the month in which the invoice is sent. The proportion of projected Operation and Maintenance Costs due and payable shall be computed in accordance with the Cost Sharing Percentages set forth in Appendix E to this Agreement. The total of such projected costs for each month shall be adjusted by the difference between the estimated and actual expenditures occurring during each month.

10.4 Payment for Operation and Maintenance Costs

Payment shall be made to the Project Manager for Operation and Maintenance Costs, which shall be shared and paid by all Parties in proportion to their Cost Sharing Percentages as set forth in Appendix E to this Agreement. Payment shall be made in full to the Project Manager within thirty (30) days from the date on which an invoice is received. Any payments sent through the United States mail, postage prepaid, or by prepaid commercial courier service, shall be deemed made on the date certified as delivered. Any amounts owed and not paid in full by the due date shall thereafter accrue an Interest Charge from the date the payment is due until the date such payment is made.

10.5 Payments to Western

Within fifteen (15) days after receipt of funds in accordance with Section 10.4, the Project Manager shall pay to Western any amounts due Western from such funds. In the event the Project Manager fails to provide to Western the necessary funds requested by Western pursuant to Section 10.3, such that Western has inadequate funds with which to perform its duties and obligations under this Agreement, Western shall provide notice in accordance with Section 28 and shall have the right, notwithstanding the provisions of Section 18.4, to suspend the performance of its duties and obligations under this Agreement and the default provisions of the IPA or LTPA, whichever is effective, shall become applicable. Upon receipt of the necessary funds by Western, or as otherwise agreed, Western shall resume the performance of its duties and obligations under this Agreement.

10.6 Payments to the Operating Agent

Within fifteen (15) days after receipt of funds in accordance with Section 10.4, the Project Manager shall pay to the Operating Agent any amounts due the Operating Agent from such funds.

10.7 Disputed Amounts and Adjustments

Disputes arising in connection with any invoice submitted by the Project Manager for Operation and Maintenance Costs shall be resolved in accordance with Section 18.

11. AUDITS

11.1 Management Committee Designated Audits

To evaluate the operating, administrative, and financial controls over Operation and Maintenance Work, the Management Committee may cause audits to be conducted not more than once annually, but at least once every five (5) years and in the event of an extraordinary Operation and Maintenance expense or Capital Improvement, of records which relate to such Operation and Maintenance Work, including but not limited to the financial, contract, scheduling, and Operation and Maintenance Work records of the Operating Agent, Western, and the Project Manager, and any other Party performing Operation and Maintenance Work. The Management Committee shall select a public accounting firm with expertise in the desired audits. All audits performed under this Section 11.1 shall be conducted in strict accordance with audit plans and budgets approved by the Management Committee. Any Party performing Operation and Maintenance Work or causing Operation and Maintenance Work to be performed shall not be entitled to vote in the Management Committee on matters related to conducting an audit of such Operation and Maintenance Work. The costs, including the reasonable costs incurred by the audited Party, of conducting all audits performed under this Section 11.1 shall be Project Costs. Each Party at its own expense may request that specific records be audited in an audit performed under this Section 11.1. A report on the results of each audit performed under this Section 11.1 shall be submitted to the Management Committee.

11.2 Other Audits

Except during periods when an audit is being conducted in accordance with Section 11.1, each Party shall have the right at its own expense and upon reasonable notice, to conduct an audit of the same books and records relating to Operation and Maintenance Work which the Management Committee is entitled to audit in Section 11.1. Any Party conducting an audit in accordance with this Section 11.2 shall pay all reasonable costs incurred by all audited Parties in connection with such audit and shall (1) minimize interference with each audited Party's activities, and (2) coordinate its audit activities with all other Parties desiring to conduct simultaneous audits.

11.3 Audits of Contracts for Operation and Maintenance Work

In entering into contracts for Operation and Maintenance Work, Parties shall attempt to include in all such contracts provisions which (1) provide to all Parties audit rights similar to those provided for in Section 11.2, (2) require the contractor to maintain records and accounts in sufficient detail to allow for audits in accordance with this Section 11, and (3) require the contractor to retain such records and accounts during the periods set forth in Section 11.4. Parties are excused from this Section 11.3 requirement in competitively bid fixed price, or fixed price variable unit price contracts, which do not provide for reimbursement of costs or submittal of claims.

11.4 Audit Periods

The right to commence audits of Operation and Maintenance Work in accordance with this Agreement shall continue two (2) years following the date on which Project Funds were used to pay for the costs of the particular Operation and Maintenance Work to be audited.

11.5 Adjustments

Any adjustments adopted by the Management Committee, following an audit conducted in accordance with this Section 11, requiring the payment of money, shall include an Interest Charge less two percent (2%), from the date of the payment being

adjusted to the date the adjustment is made. In the event of any adjustment in the billings made by a contractor, supplier, vendor, or subcontractor, the Party paying or receiving the adjustment shall promptly pay or submit an invoice to the Operating Agent, Western, or the Project Manager, whichever entity approved the disbursement of Project Funds for that contract, in the amount of the adjustment including any applicable interest.

12. INSURANCE

The Project Manager shall procure and maintain or cause to be procured and maintained, insurance with limits as set forth by the Management Committee generally in accordance with the IPA or the LTPA, whichever is effective.

13. ACCESS TO PROJECT INFORMATION AND RECORDS RETENTION

13.1 Project Information Generally

13.1.1 Each Party shall be entitled to obtain, in a timely manner, current information concerning Operation and Maintenance Work, through reasonable access to data, records, reports, and documents, or copies thereof, Project facilities, construction sites, manufacturing sites, storage facilities, operating or scheduling facilities, and to each Party performing Operation and Maintenance Work.

13.1.2 In exercising its rights to obtain access to or copies of data, records, reports, and documents regarding Operation and Maintenance Work, or to obtain access to the Party performing such work, each Party shall appoint one representative to serve as principal liaison with all Parties performing Operation and Maintenance Work.

13.1.3 Parties are encouraged to utilize common representatives in exercising their rights to obtain access to Project information. Parties shall give notice to the Project Manager of their appointed representatives and shall give notice of any change in such appointment. Parties' representatives shall have no authority to perform or direct any person in the performance of Operation

and Maintenance Work.

13.1.4 Each Party shall have reasonable access at reasonable times to such data, records, reports, and documents and, upon reasonable notice to the Participant holding and retaining them, may reproduce any or all of them at the requesting Party's sole expense.

13.2 Access to Project Facilities

Parties' representatives, subject to the provisions and limitations in this Section 13, shall be granted reasonable access to all Project facilities, and the operating or scheduling facilities of the Operating Agent and Western after any Commercial Operation Date strictly for the purpose of observing Project Work. Access shall be granted at reasonable times arranged in advance between the Party's representative and the Project Manager, the Operating Agent, or Western, as applicable, in accordance with terms and conditions of any agreement for the performance of Operation and Maintenance Work. All representatives shall comply with current safety and security procedures and practices of the Party performing the Project Work and with all applicable federal, state, and local requirements. Access may be limited at any time the Operating Agent, Western, and the Project Manager, as applicable, determines that such limitation is required for the safety or security of any personnel or equipment. At the discretion of the Operating Agent, Western, or the Project Manager, as applicable, the representatives shall be accompanied during access by authorized representatives of the Party performing the Project Work.

13.3 Retention of Documents

13.3.1 The Management Committee, the E&O Committee, the Agency, the Project Manager, the Operating Agent, Western, and each Party performing Project Work shall retain all data, records, reports, and documents relating to Project Work performed by them respectively, provided that the Management Committee shall adopt policies and procedures that are consistent with the requirements of California law applicable to public

agencies which are Parties or members of the Agency permitting the destruction or other disposition thereof.

13.3.2 Upon termination of this Agreement, the Operating Agent, Western, the Project Manager, and each Party performing Project Work shall retain, in a reasonably accessible location, all then existing data, records, reports, and documents relating to Project Work performed by them respectively, for a period of four (4) years from the date this Agreement is terminated.

14. ASSIGNMENTS

14.1 Except as provided in Sections 14.2 and 14.3, no Party shall have a right to assign, either in whole or in part, any of the rights, duties, or obligations created or imposed in this Agreement.

14.2 To the extent that a Party assigns any of its Entitlement in accordance with the IPA or the LTPA, whichever is effective, the concomitant rights, duties, and obligations of the assignor under this Agreement shall flow to the assignee which shall expressly assume all such rights, duties, and obligations in writing. Any amendments to any Project Agreements which may be necessary to accommodate any such assignment in accordance with this Section 14 shall be expeditiously completed by all Parties.

14.3 Except as provided in Sections 14.1 and 14.2, the duties and obligations of the Operating Agent, Western, and the Project Manager which are created or imposed in this Agreement may not be assigned without the approval of the Management Committee.

15. OBLIGATIONS AND RELATIONSHIP OF THE PARTIES

15.1 Each Party shall use its best efforts and work diligently, in good faith, and in a timely manner to carry out the duties and obligations imposed by this Agreement.

15.2 Each Party shall be individually responsible for its own covenants, obligations, and liabilities under this Agreement.

15.3 The covenants, obligations, rights, and liabilities of the Parties under this Agreement are intended to be several and not joint or collective, and nothing herein is intended

to be construed to create an association, joint venture, trust, or partnership, or to impose a trust or partnership covenant, obligation, or liability on or with regard to any of the Parties.

15.4 When the terms of this Agreement provide for action to be based upon the opinion, judgment, approval, review, or determination of any Party, such opinion, judgment, approval, review, or determination shall not be arbitrary, capricious, or unreasonable and such action shall be made or taken in good faith and in a timely manner.

15.5 To ensure that each Party may fully benefit from its Entitlement and related benefits resulting from its participation in the Project, each Party shall, individually and with the other Parties, assume an obligation to cooperate in the operation and maintenance of the Project, and the operation of the System, the implementation, administration, and enforcement of this Agreement and all other Project Agreements, and, where appropriate and necessary, to provide services under just and reasonable rates, terms, and conditions which do not materially and adversely affect the Electric System of a Participant, and in DWR's case also the State Water Project.

15.6 The Parties shall support, defend, and protect this Agreement before any regulatory authority or any court in any proceeding brought by an entity which is not a Party in which this Agreement, or a portion thereof, is an issue.

15.7 Except as expressly provided for in this Agreement or other Project Agreements, no Party shall be the agent of or have the right or power to bind another Party without its written consent.

16. INTEGRATION

16.1 This Agreement constitutes the complete and final expression of the agreement among the Parties and is a complete and exclusive statement of the terms of their agreement as to the matters addressed herein and when read in pari materia with other Project Agreements supersedes all prior offers, promises, representations, negotiations, discussions, communications, and commitments which may have been made in connection with the subject matter of this Agreement. This Agreement is the

product of negotiations and neither ambiguities nor uncertainties shall, therefore, be construed in a manner which is prejudicial to any Party.

16.2 The following Appendices are attached hereto and made a part of this Agreement:

Appendix A - Procedures for Curtailment Notification

Appendix B - Maintenance Program and Spare Parts Guidelines

Appendix C - Operations Guidelines

Appendix D - Administrative, General, and Overhead Expenses

Appendix E - Cost Sharing Percentages

Appendix F - Addresses for Notices

17. LIABILITY

17.1 Except for damage or loss resulting from willful misconduct, gross negligence, or breach of fiduciary obligation in connection with this Agreement, no Party, its members, directors, members of its governing body, officers, or employees shall be liable to any other Party for any loss or damage in connection with this Agreement.

17.2 Each Party shall be responsible for the consequences of its own willful misconduct, gross negligence, and breach of fiduciary obligation in connection with this Agreement, and in connection with any work undertaken in accordance with this Agreement, and shall indemnify, defend, and hold harmless the other Parties, their members, directors, members of their governing bodies, officers, and employees from the consequences thereof to the extent allowed by law. Nothing in this Section 17 shall require any Party to obtain insurance covering the willful misconduct, gross negligence, or breach of fiduciary obligation of any Party.

17.3 The provisions of this Section 17 shall not be construed to relieve any insurer of its obligation to pay any insurance proceeds in accordance with the terms and conditions of valid and enforceable insurance policies.

18. RESOLUTION OF DISPUTES

18.1 Informal Settlement

The Parties and the Project Manager shall use their best efforts to settle all disputes

arising under or in relation to this Agreement without recourse to either arbitration or litigation.

18.2 Submittal of Dispute to Management Committee

Any dispute, other than a dispute involving an alleged default which is subject to resolution in accordance with the IPA or the LTPA, whichever is effective, arising under or in relation to this Agreement, between or among Parties, which is not settled in the ordinary course of business, shall be submitted by the Project Manager at the request of the complaining Party(ies) to the Management Committee by notice in writing. Such notice shall set forth the nature of the dispute, the amount of money involved, if any, and the resolution and relief sought. The Management Committee shall meet promptly to attempt to effect a voluntary resolution of the dispute.

18.3 Formal Dispute Resolution

In the absence of a voluntary resolution, a complaining Party may seek to resolve a dispute either by seeking judicial relief or, with the written consent of all Participants which are parties to such dispute, by submitting the dispute to arbitration which shall be conducted using any procedures agreed to by such Parties. No litigation or arbitration shall be commenced until after the Management Committee has met at least once and failed to effect a voluntary resolution of the dispute; provided, that the preceding requirement shall not preclude a Party from initiating litigation or arbitration to secure any legal right which may otherwise be forfeited due to limitations or requirements imposed by rule or statute.

18.4 Continuation of Operation and Maintenance Work

Unless otherwise ordered by the arbitrator(s) or a court, or directed by the Management Committee, Operation and Maintenance Work, shall continue until a dispute is resolved, provided that the Operating Agent, Western, or the Project Manager, in performing Operation and Maintenance Work, shall take all reasonable available measures to avoid aggravating the subject matter of the dispute.

19. UNCONTROLLABLE FORCE

19.1 Except for the obligation of a Party to make payments in accordance with this Agreement, no Party shall be considered to be in default in the performance of any of its obligations when a failure to perform is due to an uncontrollable force.

19.2 The term "uncontrollable force" means any cause beyond the control of a Party which renders it unable to perform such obligation, including but not limited to failure of or imminent threat of failure of facilities due to flood, drought, earthquake, volcanic activity, tsunami, tornado, storm, fire, pestilence, lightning, and other natural catastrophe, epidemic, war, riot, civil disturbance or disobedience, vandalism, strike, labor dispute, labor or material shortage, sabotage, terrorism, government priorities, restraint by court order or public authority, and action or nonaction by, or inability to obtain the necessary authorizations or approvals from, any governmental agency or authority, which by exercise of due diligence such Party could not reasonably have been expected to avoid and which by exercise of due diligence it has been unable to overcome.

19.3 Nothing contained herein shall be construed to require a Party to settle any strike or labor dispute in which it may be involved.

19.4 In the event a Party is rendered unable to fulfill any of its obligations under this Agreement by reason of an uncontrollable force, such Party shall give prompt written notice of such fact to the Management Committee and shall seek to remove such inability with all reasonable dispatch.

20. SEVERABILITY

In the event that any term, covenant, or condition of this Agreement or the application of any such term, covenant, or condition shall be held invalid as to any person, entity, or circumstance by any court or agency having jurisdiction, such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby but shall remain in force and effect unless a court or agency holds that

such provisions are not separable from all other provisions of this Agreement.

21. WAIVER

Any waiver at any time by a Party of its rights with respect to any matter arising in connection with this Agreement shall not be deemed a waiver with respect to any subsequent matter.

22. NO DEDICATION OF FACILITIES

Any undertaking by a Party under any provision of this Agreement is rendered strictly as an accommodation and shall not constitute the dedication of the Electric System by the undertaking Party to the public, to any other Party or to any third party, and any such undertaking by a Party shall cease upon the termination of all such Party's obligations under this Agreement.

23. NO PRECEDENTS

Nothing contained in this Agreement shall be construed to establish any precedent for any other agreement, or to grant any rights to or impose any obligations on any Party beyond the scope and term of this Agreement.

24. NO THIRD PARTY BENEFICIARIES

None of the promises, rights, or obligations contained in this Agreement shall inure to the benefit of any person or entity not a Party to this Agreement, other than the rights of the members of the Agency or Southern San Joaquin which derive from their membership in the Agency or Southern San Joaquin, respectively.

25. GOVERNING LAW

This Agreement is made and entered into in the State of California. Interpretation of this Agreement, and performance and enforcement thereof, shall be determined in accordance with California law to the extent applicable, and otherwise in accordance with federal law, as if performed wholly within the State of California.

26. GENERAL CONTRACTING PROVISIONS

26.1 Contingent Upon Appropriations

Where activities provided for in this Agreement extend beyond the current fiscal

year, continued expenditures by the United States are contingent upon Congress making the necessary appropriations required for the continued performance of the United States obligations under this Agreement. In case such appropriation is not made, Western shall provide the Project Manager with as much advance written notice as is possible, and the Parties shall release the United States from its contractual obligations and from all liability due to the failure of Congress to make such appropriation.

26.2 Officials Not to Benefit

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this Agreement or to any benefit that may have arisen therefrom, but this restriction shall not be construed to extend to this Agreement if made with a corporation or company for its general benefit.

26.3 Covenant Against Contingent Fees

The Parties warrant that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Parties for the purpose of securing business. For breach or violation of this warranty, Western shall have the right to withdraw from this Agreement without liability or, in its discretion, to deduct from the contract price or consideration Western's share of the full amount of such commission, percentage, brokerage, or contingent fee.

26.4 Contract Work Hours and Safety Standards

This Agreement, to the extent that it is of a character specified in Section 103 of the Contract Work Hours and Safety Standards Act (Act), 40 U.S.C.A. Section 329 (1986), is subject to the provisions of the Act, 40 U.S.C.A. Sections 327-333 (1986), and to regulations promulgated by the Secretary of Labor pursuant to the Act.

26.5 Equal Opportunity Employment Practices

Section 202 of Executive Order No. 11246, 43 Fed. Reg. 46501 (1978), which provides,

among other things, that the Parties will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, is incorporated by reference in this Agreement.

26.6 Use of Convict Labor

The Parties agree not to employ any person undergoing sentence of imprisonment in performing work under this Agreement except as provided by 18 U.S.C. 4082(c)(2) and Executive Order 11755, December 29, 1973.

26.7 State Law

Each Party, to the extent applicable to such Party, agrees to comply with the laws of the State of California with regard to nondiscrimination, workers' compensation, and drug-free work place.

27. TITLES

The captions and headings in this Agreement are inserted to facilitate reference and shall have no bearing upon the interpretation of any of the terms and provisions of this Agreement.

28. NOTICES

Any notice, demand, request, submittal, response, or other specified form of communication, unless otherwise provided in this Agreement, shall be in writing and shall be deemed properly served, given, or made if and when delivered in person or sent by first class United States mail, postage prepaid and return receipt requested; or if and when sent by an electronic facsimile with receipt confirmed by addressee; or if and when sent by prepaid commercial courier service, to a Party at the address indicated in Appendix F to this Agreement.

29. AMENDMENTS

This Agreement may be amended only by a written instrument duly executed by all Parties hereto. Changes to the Appendices to this Agreement as a result of the operation of this Agreement or another Project Agreement shall not require amendments of this Agreement.

30. SUCCESSORS IN INTEREST

Every successor in interest to the rights, title, interest, or Entitlement of any Participant which has signed this Agreement shall be bound by all terms, provisions, and conditions of this Agreement, as if such successor in interest had duly executed this Agreement.

31. SIGNATURE CLAUSE

The signatories to this Agreement represent that they have been appropriately authorized to enter into this Agreement on behalf of the Party for whom they sign. This Agreement may be executed in counterparts, and each Party shall deliver its executed counterpart to the Project Manager.

WESTERN AREA POWER ADMINISTRATION

By: _____

Name: _____

Title: _____

Date: _____

TRANSMISSION AGENCY OF NORTHERN CALIFORNIA

By: _____

Name: _____

Title: _____

Date: _____

CITY OF VERNON

By: _____

Name: _____

Title: _____

Date: _____

SOUTHERN SAN JOAQUIN VALLEY POWER AUTHORITY

By: _____

Name: _____

Title: _____

Date: _____

SHASTA DAM AREA PUBLIC UTILITY DISTRICT

By: _____

Name: _____

Title: _____

Date: _____

SAN JUAN SUBURBAN WATER DISTRICT

By: _____

Name: _____

Title: _____

Date: _____

CARMICHAEL WATER DISTRICT

By: _____

Name: _____

Title: _____

Date: _____

CALIFORNIA DEPARTMENT OF

WATER RESOURCES

By: _____

Name: _____

Title: _____

Date: _____

APPENDIX A

PROCEDURES FOR CURTAILMENT NOTIFICATION

A.1 DESIGNATED REPRESENTATIVES

Within thirty (30) days of the execution of this Agreement, each Party shall designate a representative for the purposes of this Agreement and shall give written notice of such designation to the Operating Agent and all Parties. Any change of a designated representative by a Party shall immediately be communicated to the Operating Agent and all other Parties by written notice.

A.2 CURTAILMENT NOTIFICATION GUIDELINES

Unless modified by the Management Committee, notification of Curtailments shall be provided in accordance with the following guidelines:

A.2.1 Prescheduled Curtailment Notification Guidelines

The Operating Agent shall immediately notify the designated representative of each Party of any Curtailment which is scheduled or which has been determined to be necessary by the operator of the System. Such notification shall include the time of occurrence and the magnitude of the Curtailments on an hourly basis. The Operating Agent shall update the "bulletin board" to reflect each Party's share of Available COTP Transfer Capability.

A.2.2 Real-Time Curtailment Notification Guidelines

It is anticipated that in the event of an unanticipated curtailment or other emergency, the operator of the System shall notify the designated representative of the Parties of such Curtailment as soon as practicable and in accordance with the terms and conditions negotiated between the Parties and the operator of the System. The Operating Agent shall update the "bulletin board" to reflect each Party's share of the Available COTP Transfer Capability. Each Party or its designated representative shall be responsible for its communicating and coordinating real-time power schedules directly with the operator of the System.

APPENDIX B

MAINTENANCE PROGRAM AND SPARE PARTS GUIDELINES

B.1 OBJECTIVES

The maintenance procedures to be developed and promulgated by the Operating Agent, Western, and the Project Manager and which will be subject to approval and modification by the Management Committee, will be designed to achieve the overall objectives of the following guidelines:

B.1.1 To provide for proper maintenance of Project facilities, in accordance with Prudent Utility Practice, general Management Committee policies and procedures, relevant rules and regulations, license and permit conditions, and to best enhance Project performance, reliability, and availability to maximize the availability of the Parties' Entitlements;

B.1.2 To provide for mutual assistance policies and agreements necessary to enhance system availability and reliability, to maximize the availability of the Parties' Entitlements;

B.1.3 To provide for development of emergency repair strategies and plans to ensure rapid and safe repair of the Project facilities, and to eliminate or minimize outage time;

B.1.4 To utilize the existing operation and maintenance practices of the Parties performing Operation and Maintenance Work to the extent desirable and practicable; and

B.1.5 To provide for the desired and proper level of coordination among the Operating Agent, all other Parties, other interconnected utilities, and all those performing Operation and Maintenance Work.

B.2 CRITERIA

The Operation and Maintenance Work performed on Project facilities will comport with the following criteria:

B.2.1 Coordination of maintenance schedules with other Parties, interconnected utilities,

and those performing Operation and Maintenance Work in advance of work being performed;

B.2.2 Development and adaption of operation and maintenance procedures to establish safe and efficient methods of doing the Operation and Maintenance Work;

B.2.3 Provision of properly trained and competent personnel;

B.2.4 Establishment and maintenance of records and procedures to properly document the maintenance history of all Project facilities;

B.2.5 Provision and use of safe procedures, tools, and equipment for all maintenance activities;

B.2.6 Provision of appropriate management systems and reviews to ensure optimum productivity and equipment availability; and

B.2.7 Provision of necessary plans and controls to ensure compliance with all applicable federal, state, and local rules and regulations for environmental concerns and other license, permit, and regulatory matters.

B.3 TRANSMISSION LINE MAINTENANCE GUIDELINES

To the extent practicable, transmission line maintenance will be scheduled and performed with the Project energized. The work will be performed using a combination of bare-hand and/or hot stick methods (live-line), as appropriate. Activities associated with the normal maintenance of Project transmission lines should incorporate the following guidelines:

B.3.1 All lines are to be routinely patrolled. Both ground and aerial patrol of all Project lines should be performed as often as necessary. In those areas subject to numerous right-of-way encroachments, lines should be patrolled with greater frequency. Routine ground patrol of all towers should also be performed as often as required. Special patrols of Project transmission lines should be provided following unscheduled outages and when system conditions warrant;

B.3.2 All towers are to be inspected regularly. Such regular inspection will include (1) climbing of all new or upgraded towers at least once within four (4) years after energization, and (2) subsequently, climbing five percent (5%) of all steel towers

annually so that one hundred percent (100%) of all towers are inspected every twenty (20) years;

B.3.3 "Hot spots" are to be detected and repaired. Heat emission detection surveys, after initial energization, are to be made at least every three (3) years to detect any localized heat loss spots. Any time that loose connections or abnormal loading conditions are suspected, heat emission detection surveys should be conducted on a more frequent schedule;

B.3.4 Access roads are to be kept passable. Access road maintenance should be performed on an as-needed basis. All access road maintenance on public and private lands will be properly coordinated;

B.3.5 Fire prevention plans are to be prepared and implemented. To minimize the risk of a fire forcing any line of the System out of service, fire prevention activities may include prescribed burning, clearing, thinning, and other vegetation management options designed to maintain the reliability of the Project;

B.3.6 The Project rights-of-way are to be kept clear. Clearing of rights-of-way will be required in rapid-growth brush and timber areas. This work will be appropriately scheduled and coordinated. Encroachments on the Project rights-of-way will be brought to the attention of the appropriate Parties; and

B.3.7 Airway lighting and marking installations will comply with Federal Aviation Administration requirements. Burned-out lights and/or malfunctioning fixtures will be replaced or repaired in order to meet Federal Aviation Administration rules and regulations regarding tower/line visibility.

B.4 SUBSTATION FACILITIES MAINTENANCE GUIDELINES

To the extent practicable, substation and compensation station maintenance will be scheduled and performed to minimize the time the Project facilities are out of service and to maximize the availability of the Parties' Entitlements. Activities associated with the normal maintenance of Project substations should incorporate the following guidelines:

B.4.1 Walk-through inspections are to be made weekly by qualified personnel, except

the Maxwell Compensation Station which will be inspected on a monthly basis by qualified personnel;

B.4.2 "Hot spots" are to be detected and repaired. Heat emission detection surveys, after initial energization, are to be made at least every three (3) years to detect any localized hot spots. Any time loose connections or abnormal overloading conditions are suspected, heat emission detection surveys should be conducted on a more frequent schedule;

B.4.3 Viability of the ground mat should be ensured. Substation grounding systems should be regularly tested. Continued viability of the ground mat should be confirmed by test at least once every five (5) years;

B.4.4 Substation sites are to be kept neat and free from all hazards and obstructions;

B.4.5 Proper working condition and operability of power circuit breakers should be ensured. Annual and bi-annual external maintenance procedures will be performed. A comprehensive internal inspection and necessary maintenance should be performed at least once every five (5) years, and more frequently if necessary, due to the number and severity of fault operations, number of nonfault operations, and accumulated compressor operations, as applicable. Such maintenance activities should meet the manufacturers' recommendations;

B.4.6 Environmental compliance plans will be prepared, put in place, and adhered to in compliance with any other applicable federal, state, or local laws, relating to environmental compliance, hazardous and toxic materials maintenance and management, and the regulations implementing those laws. All Project stations will have spill prevention, control and countermeasure plans. Equipment for cleaning up and disposing of any oil spill contaminated materials will be readily available;

B.4.7 The viability of control and protection equipment will be ensured. Complete functional testing of all controls and protection equipment should be undertaken once every two and one half (2½) years. All testing which may impact Western

System Coordinating Council (WSCC) member systems should be performed in coordination with other (WSCC) members, as appropriate. Protective relay settings will be verified at intervals recommended by the more stringent of Prudent Utility Practice or manufacturers' recommendations;

B.4.8 The accuracy of revenue-quality metering systems will be ensured. Tests of revenue-quality metering equipment, if any, should be performed at least bi-annually;

B.4.9 Power transformers will be maintained in accordance with manufacturers' recommended maintenance schedule. Maintenance work should provide for such tests as dissolved gas-in-oil analysis, power factor tests, turns ratio tests, megger tests, and heat emission detection surveys of bushings, connections and tap changers;

B.4.10 Circuit switchers will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule. Maintenance work should provide for comprehensive inspection and timing tests;

B.4.11 Supervisory control and data acquisition equipment will be maintained in accordance with Prudent Utility Practice or the manufacturer's recommended maintenance schedule;

B.4.12 Shunt capacitors and series capacitors will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule;

B.4.13 Shunt reactors will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule. Shunt reactors should be subjected to such tests as gas-in-oil analysis and power factor tests;

B.4.14 Station batteries will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule;

B.4.15 Air disconnect switches will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule;

B.4.16 Lightning arresters will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule. Insulation power factor tests should be conducted at least once every five (5) years; and

B.4.17 Current, potential, and coupling capacitor voltage transformers will be maintained in accordance with Prudent Utility Practice or the manufacturers' recommended maintenance schedule. Insulation power factor tests, including excitation current tests, should be conducted at least once every five (5) years.

B.5 COMMUNICATION FACILITIES MAINTENANCE GUIDELINES

To the extent practicable, communication circuit and equipment maintenance activities will be scheduled and performed with Communication Facilities energized to minimize the time Communication Facilities are out of service and to maximize the Parties' Entitlements. Activities associated with the normal maintenance of Communication Facilities should incorporate the following guidelines:

B.5.1 Compliance with all applicable rules and regulations will be ensured;

B.5.2 Communication circuit benchmark tests should be performed once every three (3) years. Communication circuit verification tests should be performed at least annually. Degraded circuits should be promptly repaired and/or replaced;

B.5.3 Communications equipment problems detected by an alarm, reporting system, or multiplex components, will be acknowledged and/or responded to promptly, twenty-four (24) hours per day, seven (7) days per week;

B.5.4 All repeater sites are to be kept neat and free from all hazards and obstructions.

B.5.5 The Communication Facilities will be inspected by climbing all new or upgraded antenna towers within one (1) year after the communication system is placed in service and, subsequently, twenty percent (20%) of all antenna towers will be inspected every year;

B.5.6 All access roads will be kept passable and up to appropriate standards. All access road maintenance on public and private lands should be properly coordinated.

B.5.7 All tower lighting and marking installations will be maintained in accordance

with Federal Aviation Administration requirements;

B.5.8 All repairs and scheduled maintenance should be accomplished to avoid the simultaneous loss of use of both of the Project microwave communication paths that are Communication Facilities;

B.5.9 Continued viability of the grounding system for the Communication Facilities will be ensured;

B.5.10 Telecommunications and related equipment will be maintained on a regular schedule; and

B.5.11 Dependability of normal and emergency power supplies will be ensured.

B.6 SPARE PARTS GUIDELINES

Where practical, spare parts should be centrally stored to minimize storage costs and facilitate computer-based inventory system requirements. Warehoused spare parts will be available to maintenance personnel twenty-four (24) hours per day, seven (7) days per week. A suggested list of spare parts should be prepared by the Project Manager, in coordination with the Operating Agent and Western, and approved by the Management Committee.

APPENDIX C

OPERATIONS GUIDELINES

C.1 General Objectives

The Operating Agent, Western, and the Project Manager will provide for the daily operation of the Project in the manner necessary to ensure the Parties of the maximum benefit of their Entitlements. In arranging for operating work, and in preparing all guides, procedures, standards, schedules, and policies, the Operating Agent, Western, and the Project Manager will apply the following specific guidelines, in addition to Prudent Utility Practice and the general standards applicable to all Operation and Maintenance Work performed in accordance with this Agreement.

C.2 Specific Guidelines

Unless modified by the Management Committee, the Operating Agent, Western, and the Project Manager will adopt and apply the following guidelines in the performance of all Operation and Maintenance Work performed on the Project:

C.2.1 Arrange for and prepare procedures for switching orders to establish points of control on the Project, as necessary, and to ensure the safety of all switching and maintenance personnel;

C.2.2 Arrange for all necessary clearance approvals and coordination with others to ensure the safety of all personnel involved with Operation and Maintenance Work and to ensure the minimum disruption of service and interference with Entitlements;

C.2.3 Ensure the promulgation and application of standard operating procedures and protocols for routine and emergency operations, and ensure the development of mutual aid arrangements with appropriate entities;

C.2.4 Ensure that all required outages, all maintenance activities, and all repairs are coordinated among all those performing Operation and Maintenance Work and all other entities involved;

C.2.5 Ensure that all required communications among the Parties, others performing

Operation and Maintenance Work, and other entities involved in any aspect of Operation and Maintenance Work take place in a timely manner;

C.2.6 Ensure that all Operation and Maintenance Work is performed safely, consistent with all applicable standards and criteria, and in a manner that satisfies the requirements of this Agreement;

C.2.7 Ensure that all data necessary to satisfy the requirements of this Agreement are produced, stored, and reported in a manner consistent with the requirements of the Project Agreements; and

C.2.8 Ensure that all Operation and Maintenance Work is completed in a manner that is economically and environmentally sound.

APPENDIX D

ADMINISTRATIVE, GENERAL, AND OVERHEAD EXPENSES

D.1 WESTERN'S ADMINISTRATIVE AND GENERAL EXPENSES

For each direct hour of Operation and Maintenance Costs, four overhead rates, representing the Project's share of administrative and general expenses, will be applied. Within Western's Financial Management System (FMS), the Cost Distribution Subsystem (Subsystem) is the mechanism that uses direct labor hours as the basis for allocation of these indirect costs. Estimated expenses are divided by the estimated number of direct labor hours to determine the indirect cost rate in each category.

In the Subsystem, costs are accumulated in clearing accounts (indirect cost pools) on a daily basis and distributed to the true responsible benefiting activities, jobs, and work orders. The distribution process is performed at least monthly and is closely monitored using cost distribution reports generated by FMS. If an under-distribution or over-distribution of operating expense is disclosed, the distribution rate may be adjusted. At the end of the year, during the closing process, clearing accounts are adjusted to dispose of any remaining balances.

The four overhead rates are the Headquarters and Sacramento Area office Administrative and General Expenses (AGE) and the Headquarters and Sacramento Area office Associated Direct Expenses (ADE). Included in these costs are the following:

AGE - Labor and other expense, including contract support services, incurred by Western which are properly chargeable to utility operations but which are not chargeable directly to a particular operating function. Included are data processing and management costs.

ADE - The undistributed cost and expenses for all types of direct cost which possess a clear relationship (measurable with reasonable objectivity) to benefiting activities, but which for various purposes require initial accumulation into homogenous pools to reflect the total effort prior to distribution. This includes data processing costs, system-wide transmission expense, substation and switchyard general expense, and transmission lines general expense.

Calculation of AGE includes the deduction of General Western Allocation (GWA). The principle behind GWA is that costs that benefit the ratepayers at large, or that are incurred in establishing or maintaining the system as a whole should not be charged to cosponsored and reimbursable customers. GWA costs are distributed directly to power projects to be recovered as current period operating expenses in the Project's revenue requirement.

The FMS is designed to associate costs directly to specifically defined facility or non-facility work orders. Thus, if a cost is incurred that will benefit only one facility or non-facility work order, it is directly charged to that work order. It is a direct charge. Alternatively, if a cost is incurred that cannot be directly associated with one facility or non-facility work order, it automatically becomes an indirect cost. It is paid for from a clearing account and the cost is distributed over all work orders associated with that indirect cost rate.

D.2 WESTERN'S INDIRECT AND OVERHEAD COST

Western's administrative and overhead costs are in two categories--AGE and ADE. Western's FMS calculates the AGE costs, as a proportion of Direct Labor Charges (DLC) spent on the COTP, and includes costs of items such as office supplies, computers, and salaries of administrative and management staff who do not work directly on a given project. The organizational overhead costs, such as supervisors' and managers' salaries, both in Sacramento and Western's Headquarters, who do not directly charge the COTP

account are covered under ADE. Both the AGE and ADE costs are variable and are dependent on DLC and are applied on a monthly basis. The rates (percentages) are determined on an annual basis and adjusted as needed during the year.

D.3 EXAMPLE APPLICATION AND CALCULATION OF AGE AND ADE

Western Direct Labor and 1993 Revised Overhead Cost for O&M:

Electrical Engineer, DLC	100%	$24.21
Benefits	35%	8.47
HQ AGE, in % of DLC	22%	5.25
HQ ADE, in % of DLC	21%	5.10
SAO AGE, in % of DLC	45%	10.95
SAO ADE, in % of DLC	21%	5.09
Subtotal (Benefits + AGE + ADE)	144%	$34.86
Total (DLC + Benefits + AGE + ADE)/Hour =		$59.07

The SAO AGE and ADE were computed in the following manner:

SAO AGE:

Management and Supervision Costs	$3,704,189
Computer Operations Costs	$1,212,915
Sub-Total	$4,917,104
Less GWA (Governmental Agency Operating Costs)	$2,925,971
Total	$1,991,133
Divided by Direct Labor Hours	181,814
AGE Rate	$10.95 per hour

SAO ADE:

Data Processing Costs	$57,030
Transmission Lines General Expense	$194,858
Substation & Switchyard Gen. Expense	$261,382
System-Wide Transmission Expense	$273,140
Total	$786,410
Divided by Direct Labor Hours	154,473
ADE Rate	$5.09 per hour

Direct labor hours are estimated based on prior years actual plus or minus any expected changes. Direct labor hours vary because the two rates represent and are charged against two different labor pools. Headquarters AGE and ADE are computed by Headquarters using a similar process. AGE and ADE do not include power marketing or rate computation costs.

APPENDIX E

COST SHARING PERCENTAGES

E.1 Capital Improvement Costs, Except for Capital Improvement Costs Related to Replacements on the CVP Upgrade Segment, and Operation and Maintenance Costs Except for Operation and Maintenance Costs Related to Operation and Maintenance Work on the CVP Upgrade Segment. Subject to future modification in accordance with the IPA or the LTPA, whichever is effective, the Participants shall be responsible for paying Capital Improvement Costs, except for Capital Improvement Costs related to Replacements on the CVP Upgrade Segment, and Operations and Maintenance Costs, except for Operation and Maintenance Costs related to the CVP Upgrade Segment, in the following proportions:

E.1.1 The Agency, ~~85.2557~~ 79.9272 percent or ~~84.5890~~ 79.3022 percent;[1]

E.1.2 Western, ~~3.3333~~ 9.3750 percent;

E.1.3 DWR, 0.0000 percent;

E.1.4 Vernon, ~~8.0530~~ 7.5497 percent;

E.1.5 Southern San Joaquin, ~~2.2000~~ 2.0625 percent;

E.1.6 Shasta, ~~1.0246~~ 0.9606 percent or ~~1.6913~~ 1.5856 percent;[1]

E.1.7 Carmichael, ~~0.0667~~ 0.0625 percent; and

E.1.8 San Juan, ~~0.0667~~ 0.0625 percent.

E.2 Capital Improvement Costs Related to Replacement on the CVP Upgrade Segment, the Olinda Substation, the Maxwell Compensation Station, and the Tracy Substation Expansion, and Operation and Maintenance Costs Related to Operation and Maintenance Work on the CVP Upgrade Segment, the Olinda Substation, the Maxwell Compensation Station, and the Tracy Substation Expansion. Subject to future modification in accordance with the IPA or the LTPA, whichever is effective, the Participants shall be responsible for paying the Capital Improvement Costs and Operation and Maintenance Costs attributable to the CVP Upgrade Segment in the following proportions:

E.2.1 The Agency, 67.3072 percent or 66.7808 percent;[1]

E.2.2 Western, 23.6843 percent;

E.2.3 DWR, 0.0000 percent;

E.2.4 Vernon, 6.3576 percent;

E.2.5 Southern San Joaquin, 1.7368 percent;

E.2.6 Shasta, 0.8089 percent or 1.3353 percent;[1]

E.2.7 Carmichael, 0.0526 percent; and

E.2.8 San Juan, 0.0526 percent.

[1] A dispute exists as of the effective date of this Agreement between the Agency and Shasta regarding the level of their respective right, title, interest, ownership, and Entitlement in the Project. This Appendix will be modified, as necessary, to reflect the final resolution of such dispute and such modification shall not require amendment of this Agreement.

APPENDIX F

ADDRESSES FOR NOTICES

To Transmission Agency of Northern California:
Chairman
3100 Zinfandel Drive (95670)
P. O. Box 15129
Sacramento, CA 95851-0129

To Western Area Power Administration:
Area Manager
1825 Bell Street, Suite 105
Sacramento, CA 95825

To City of Vernon:
City Administrator
4305 Santa Fe Avenue
Vernon, CA 90058

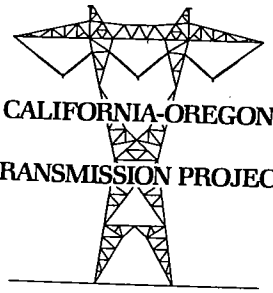
To Southern San Joaquin Valley Power Authority:
Manager
2100 "F" Street, Suite 100
Bakersfield, CA 93301

To Shasta Dam Area Public Utility District:
General Manager
1650 Stanton Drive
P. O. Box 777
Central Valley, CA 96019

To Carmichael Water District:
Director
7001 Fair Oaks Boulevard
Carmichael, CA 95608

To San Juan Suburban Water District:
General Manager and Secretary
9935 Auburn Folsom Road
P. O. Box 2157
Roseville, CA 95746

To California Department of Water Resources:
Power Manager, Division of Operations and Maintenance
1416 9th Street (95814)
P. O. Box 94236
Sacramento, CA 94236-0001



Don Wagenet
Kirby

P.O. Box 15140, Sacramento, CA 95851-5140 (916) 852-1273

October 14, 1994

Mr. Daniel C. French
Project Liaison Officer
U.S. Department of Agriculture
U.S. Forest Service
Shasta-Trinity National Forests
2400 Washington Avenue
Redding, CA 96001

Subject: Right of Way Contract

Dear Dan:

Enclosed is your copy of the fully executed and recorded Right of Way Contract between the USDA, Forest Service and the Transmission Agency of Northern California.

Sincerely,

John S. Forman

Enclosure

38989

RECORDED IN OFFICIAL RECORDS OF SHASTA COUNTY, CALIFORNIA
46 MIN. PAST 9A M
SEP7 1994
RECORDING FEE $ NO FEE

RECORDED AT REQUEST OF Transmission Agency of Northern California
OFFICIAL RECORDS SISKIYOU COUNTY, CALIF.
SEP 21 11 20 AM '94
94013429
NO CHARGE

8034-01

BK0402PG0537

RECORDING REQUESTED BY:

INDEXED

AND WHEN RECORDED MAIL TO:

Transmission Agency of Northern CA
P.O. Box 15140
Sacramento, CA 95851-5140
ATTN: Patricia Coburn

002773

94 AUG 15 AM 8:46
OFFICIAL RECORDS
MODOC CTY, CA FEE$ WAIVED
MICHAEL TEDRICK, RECORDER

RECORDED AT THE REQUEST OF

STATE OF CALIFORNIA

REAL PROPERTY TRANSFER TAX $ None

DECLARED:
BY AND FOR: USDA, Forest Service

SPACE ABOVE THIS LINE FOR RECORDER'S USE
NO RECORDING FEE PAYABLE
GOVERNMENT CODE SECTIONS 6103 and 27383
NO TRANSFER TAX PAYABLE
REVENUE & TAXATION CODE SECTION 11922

RIGHT OF WAY

THIS RIGHT-OF-WAY, a Statutory EASEMENT, dated this 6th day of July, 1994, is from the UNITED STATES OF AMERICA, acting by and through the Regional Forester, Pacific Southwest Region, Forest Service, Department of Agriculture, hereinafter called "Grantor," to the TRANSMISSION AGENCY OF NORTHERN CALIFORNIA (TANC), a Joint Powers Agency of California, hereinafter called "Grantee."

WHEREAS, the Grantee has requested a statutory easement under the Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761 et seq.) herein called Right-of-Way and the regulations thereunder for the operation and maintenance of its 500kV CALIFORNIA-OREGON TRANSMISSION PROJECT across National Forest lands within the Lassen, Modoc, and Shasta-Trinity National Forests, State of California.

NOW THEREFORE, Grantor does hereby grant to Grantee a Right-of-Way under the Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761 et seq.) for the operation and maintenance of its existing 500kV California-Oregon Transmission Project. The Grantee may sublet the use and occupancy of the premises and improvements authorized only with the prior written approval of the authorized officer. The area authorized by this Right-of-Way is limited to a transmission corridor within the Lassen, Modoc, and Shasta-Trinity National Forests that is depicted in Exhibit A, entitled "California-Oregon Transmission Project Location Map", a copy of which is attached and hereby made a part of this document. The legal description of the authorized use is set forth in Exhibit B, a copy of which is attached and hereby made as part of this document.

The Right-of-Way for the transmission line will be limited to 200 feet in width, except as approved by the Forest Service in writing for additional width to landscape the Right-of-Way. Access roads necessary for operation and maintenance of the transmission line are limited to those listed in Exhibit C.

This grant is made subject to the following conditions applicable to Grantee, its permittees and contractors.

1. This Right-of-Way is issued for a period of 50 years, ending December 31, 2043, or the service life of the project (whichever is less). The terms and conditions of this Right-of-Way shall be subject to revision at years

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fifteen (15), thirty (30), and forty (40), but is renewable provided Grantee will comply with the then-existing rules and regulations governing the occupancy and use of National Forest lands. Upon agreement of both parties, the Right-of-Way may be revised if necessary to meet changing times and conditions.

2. The Grantee shall pay annually in advance a sum determined by the Forest Service to be the fair market value for the use granted by the authorization. The payment for calendar year 1993 has been made. Payments for each subsequent calendar year shall be the amount of $25,306.00 adjusted using the Implicit Price Deflator-Gross National Product index (IPD_GNP), or other factor selected by the Forest Service, to reflect more nearly the fair market value of the use. At intervals to be determined by certain changes in the indexes used to establish the linear right-of-way fee schedule, the fee shall be reviewed and adjusted as necessary to assure that it is commensurate with the value of the rights and privileges authorized. Failure of the Grantee to pay the annual payment, late charges, or other fees or charges when due shall cause this authorization to terminate.

   The Grantee shall pay an interest charge on any fee amount not paid by the payment due date.

   Interest shall be assessed using the most current rate prescribed by the United States Department of Treasury Financial Manual (TFM-6-8025.20). Interest shall accrue from the date the fee payment was due. In addition, certain processing and handling administrative costs may be assessed in the event the account becomes delinquent and added to the amounts due.

   A penalty of 6 percent per year shall be assessed on any fee amount overdue in excess of 90 days from the due date of the first billing.

   Payments will be credited on the date received by the designated collection officer or deposit location. If the due date(s) for any of the above payments or fee calculation statements fall on a nonworkday, the charges shall not apply until the close of business of the next workday.

3. This Right-of-Way is subject to all outstanding valid rights existing on the date of the Right-of-Way.

4. Upon change in ownership of the facilities authorized herein, the rights granted under this Right-of-Way may be assigned to the new owner upon application to and approval of the Regional Forester. The new Grantee must qualify and agree to comply with and be bound by the terms and conditions of the authorization.

5. The Authorized Officer may take actions to suspend, revoke or terminate this Right-of-Way as provided in 36 CFR 251.60(h)(1991).

   Upon suspension, revocation, or termination, the Grantee shall remove within a reasonable time all structures and improvements except those owned by the United States, and shall restore the site to a condition satisfactory to the authorized officer, unless otherwise agreed upon in writing or in this permit. If the Grantee fails to remove all such structures or improvements within a reasonable period as determined by the authorized officer, they shall become the property of the United States,

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but that will not relieve the holder of liability for the cost of their removal and restoration of the site.

6. During the performance of this Right-of-Way, the Grantee agrees:

a. In connection with the performance of work under this Right-of-Way, including construction, maintenance, and operation of the facility, the Grantee shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, or handicap. (Ref. Title VI of the Civil Rights Act of 1964 as amended).

b. The Grantee and employees shall not discriminate by segregation or otherwise against any person on the basis of race, color, religion, sex, national origin, age or handicap, by curtailing or refusing to furnish accommodation, facilities, service, or use privileges offered to the public generally. (Ref. Title VI of the Civil Rights Act of 1964 as amended, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments, and the Age Discrimination Act of 1975).

c. The Grantee shall include and require compliance with the above nondiscrimination provisions in any subcontract made with respect to the operations under this Right-of-Way.

d. Signs setting forth this policy of nondiscrimination to be furnished by the Forest Service will be conspicuously displayed at the public entrance to the premises, and at other exterior or interior locations as directed by the Forest Service.

e. That the Forest Service shall have the right to enforce the foregoing nondiscrimination provisions by suit for specific performance or by any other available remedy under the laws of the United States or the State in which the breach or violations occurs.

7. Except for such restrictions as the Grantee and the authorized officer may agree to be necessary to protect the installation and operation of approved structures and developments, the lands covered by this grant shall remain open to the public for all lawful purposes. To facilitate public use of the Right-of-Way, all existing roads, or such roads as may be constructed by the Grantee, shall remain open to the public except for such sections as may be closed by the authorized officer after consultation with the Grantee.

8. As specified in Exhibit C.4., the Grantee shall provide maintenance made necessary by its use of any existing roads or roads constructed within the Right-of-Way.

9. The Grantor shall have unrestricted use of the Right-of-Way and any road(s) constructed thereon for all purposes deemed necessary or desirable in connection with the protection, administration, management, and utilization of Federal lands or resources; and shall have the right alone to extend rights and privileges for use of the Right(s)-of-Way and road(s) thereon to States and local subdivisions thereof, and to other users including members of the public, except users of land or resources owned or controlled by the Grantee: provided, that such use shall be controlled by the Forest Service so as not unreasonably to interfere with use of the Right(s)-of-Way or road(s) by the Grantee or cause the Grantee to bear a share of the cost of

maintenance greater than the Grantee's use bears to all use of the road.

10. The Grantee, in the exercise of the privileges granted by this Right-of-Way, shall require that its employees, sublessees, contractors, subcontractors, or renters and their employees comply with all applicable conditions of this Right-of-Way and that the conditions of this Right-of-Way be made a part of all subleases, contracts, subcontracts, or rental agreements.

11. Chemical materials may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, trash, fish, etc., without prior written approval based on completion of a site specific NEPA document by the Forest Service.

    A report of planned use of pesticides or herbicides will be submitted to the authorized officer prior to use. The Grantee assumes the risk that the NEPA process may delay the planned use.

    Only those materials approved and registered by the U.S. Department of Agriculture for the specific purpose planned will be considered for use on these lands. Label instructions will be strictly followed in the preparation and application of pesticides and disposal of excess materials and containers.

12. The Grantee shall be responsible for the prevention and control of soil erosion and gullying on lands covered by this Right-of-Way and adjacent thereto resulting from the operation or maintenance of the authorized use. The Grantee shall so construct and maintain the improvements approved by the authorized officer to avoid the accumulation of excessive heads of water and to avoid encroachment on streams. The Grantee shall revegetate all ground where the soil has been exposed using seed mixtures and application rates recommended by the authorized officer. The Grantee shall construct and maintain terracing, water bars, lead-off ditches or other preventive works that may be required to prevent and control erosion as prescribed by the authorized officer.

13. The Grantee shall protect the scenic aesthetic values and the fish and wildlife habitat values of the area under this Right-of-Way, and the adjacent land, during the operation and maintenance of the authorized use.

14. The Grantee shall take action both independently and on request of any duly authorized representative of the United States to prevent and suppress fires on or near the lands under this grant, including making available such maintenance forces and equipment as may be reasonably obtainable for the suppression of such fires.

15. This Right-of-Way is granted with the express understanding that should future location of Government improvement, road rights-of-way or utilization of National Forest resources require the relocation of the Grantee's improvement, such relocation will be done by, and at the expense of the Grantee within two (2) years of request by the authorized officer.

16. This Right-of-Way is subject to the rights and privileges granted in mineral, geothermal, or oil and gas leases covering this land which have been issued by an authorized agency of the United States, and this Right-of-Way does not authorize the prevention or obstruction of the

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reasonable exercise of the rights and privileges granted by said mineral, geothermal or gas leases.

17. The Grantee shall take reasonable precautions to protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges authorized by this Right-of-Way, depending on the type of monument destroyed, the Grantee shall see that they are reestablished or restored in accordance with:

    a. The procedures outlined in the "Manual of Instructions for the Survey of the Public Lands of the United States";

    b. The specification of the county surveyor; or

    c. The specifications of the Forest Service.

    Furthermore, the Grantee shall cause such official survey records as are affected to be amended.

18. Avalanches, earthquakes, volcanic activity, forest and brush fires, rising waters, high winds, falling limbs or trees, and other hazards are natural phenomena in the forest that present risks which the Grantee assumes. The Grantee has the responsibility of inspecting the Right-of-Way, and immediate adjoining area for dangerous trees or other evidence of hazardous conditions and, after securing permission from the authorized officer, of removing such hazards.

19. No signs or advertising devices shall be erected on the area covered by this Right-of-Way, or highways leading thereto, without prior approval by the Authorized Officer as to location, design, size, color, and message. Erected signs shall be maintained or renewed as necessary to neat and presentable standards, as determined by the authorized officer.

20. The Grantee shall be liable for all injury, loss, or damage, including fire suppression costs caused by the Grantee's use and occupancy of the area covered by the Right-of-Way without regard to the Grantee's negligence, provided that the maximum liability without fault shall not exceed $1,000,000 for any one occurrence. Liability for injury, loss, or damage, including fire suppression costs, in excess of the specified maximum, shall be determined by the laws governing ordinary negligence of the jurisdiction in which the damage or injury occur.

    Notwithstanding the foregoing, the United States does not hereby limit or exclude any other remedies available by law. The Grantee shall be liable to the full extent provided by all pollution control statutes, including,but not limited to the Oil Pollution Act, 33 U.S.C. sec. 2701 et seq., the Comprehensive Environmental Response, Control and Liability Act, 42 U.S.C. sec. 9601 et seq., as amended, the Federal Water Pollution Control Act, 33 U.S.C. sec. 1251 et seq., and the Resource Conservation and Recovery Act, 42 U.S.C. sec. 6901 et seq.

21. Grantee agrees to operate and maintain its transmission line to the best of its ability in accordance with the most modern practices, giving due consideration to protection against initiating forest fires. In the event a sustained 500kV line outage occurs during the fire season between Malin,

Oregon and Olinda, California, Grantee will notify the appropriate Forest Service Fire Dispatcher immediately [see Exhibit D - Map] for office location and emergency phone numbers]. In the event of a fire in the vicinity of the Right-of-Way, Grantee will cooperate with the Forest Service, to the extent it reasonably can. However, the Grantee retains the authority to de-energize or energize the line. Grantee agrees that if the line is de-energized, Grantee will inform the appropriate Forest Service Fire Dispatcher prior to energizing the line.

22. The Grantee shall make provision or bear the reasonable cost of making provision for avoiding inductive or conductive interference between any transmission facility or other works constructed, operated, or maintained by it on the Right-of-Way and any radio installation, telephone line, or other communication facilities existing when the Right-of-Way is authorized or any such installation, line or facility thereafter constructed or operated by the United States or any agency thereof. This provision shall not relieve the Grantee from any responsibility or requirement which may be imposed by other lawful authority for avoiding or eliminating inductive or conductive interference.

23. The Grantee shall comply with all Federal, State, and local laws and regulations which are now, or may in the future become, applicable to the area or operations covered by this Right-of-Way.

24. Except as provided in paragraph 20, the Grantee shall indemnify, defend, and hold the Grantor harmless from any costs, damages, claims, liabilities, and judgements arising from past, present, and future acts or omissions of the Grantee, its employees, agents, contractors, lessees arising out of, or in connection with, Grantee's use, occupancy, or operations covered by this Right-of-Way. This indemnification and hold harmless agreement includes, but is not limited to, acts and omissions of the Grantee, its employees, agents, contractors, lessees, arising out of, or in connection with, the use and/or occupancy authorized by this Right-of-Way which results in: (1) violations of Federal, State, and local laws and regulations which are now, or may in the future become, applicable to the area or operations covered by this Right-of-Way, including, but not limited to, the Oil Pollution Act, 33 U.S.C. sec. 2701 et seq., the Comprehensive Environmental Response, Control and Liability Act, 42 U.S.C. sec. 9601 et seq., as amended, the Federal Water Pollution Control Act, 33 U.S.C. sec. 1251 et seq., and the Resource Conservation and Recovery Act, 42 U.S.C. sec. 6901 et seq.; (2) judgements, claims, or demands assessed against the Grantor; (3) costs, expenses, or damages incurred by the United States; (4) other releases or threatened releases on or into land, property, and other interests of the Grantor by solid waste and/or hazardous substance(s) as defined by Federal or State environmental laws; (5) or other activities by which hazardous substances or wastes, as defined by Federal and State environmental laws, were generated, released, stored, used, or otherwise disposed on the area covered by this Right-of-Way, and any clean-up response, natural resource damage, or other, actions related in any manner to said hazardous substances or wastes. This covenant shall be construed as running with the land, and may be enforced by the United States in a court of competent jurisdiction.

25. The Grantee has an affirmative duty to protect from injury and damage the land, property and other interests of the United States covered by this Right-of-Way. Damages include, but are not limited to, all costs and

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damages associated with or resulting from the release or threatened release of a hazardous substance or waste, as defined by Federal and State environmental laws, occurring during or as a result of the Grantee's, its employees, agents, contractors, lessees, on or related to, the lands, property, and other interests covered by the permit.

Except as provided in paragraph 20, the Grantee shall compensate in full the United States for damages occurring under the terms of this Right-of-Way or under any law or regulation applicable to the National Forests caused by the Grantee, its employees, agents, contractors, lessees, arising out of the acts or omissions associated with the use and/or occupancy covered by this Right-of-Way. The Grantee shall be liable for all injury, loss, or damage, clean-up of hazardous substances, or other costs associated with rehabilitation or restoration of natural resources arising out of, or in connections with, the Grantee's, its employees, agents, contractors, lessees, use and/or occupancy covered by this Right-of-Way. Compensation shall include, but is not limited to, the value of resources damaged or destroyed, the costs of restoration, clean-up, or other mitigation, fire suppression, or other types of abatement costs, and all administrative, legal (including attorneys fees), and other costs in connection therewith.

26. Nothing in this Right-of-Way shall be construed to imply permission to build or maintain any structure not specifically authorized in this Right-of-Way.

27. If, prior to or during excavation work, items of archaeological, paleontological, or historic value are reported or discovered, or an unknown deposit of such items is disturbed, the Grantee will immediately cease excavation in the area so affected. Grantee will then notify the Forest Service and will not resume excavation until written approval is given by the authorized officer.

    If it deems it necessary or desirable, the Forest Service may require the Grantee to have performed recovery, excavation, and preservation of the site and its artifacts at the Grantee's expense. At the option of the Forest Service, portions of this authorization may be terminated at no liability by the United States when such termination is deemed necessary or desirable to preserve or protect archaeological, paleontological, or historic sites and artifacts.

28. The Grantee will comply with this Stipulation:

    a. The Forest Service recognizes that other Participants in the COTP besides TANC may assume major roles such as operating agent, but so long as TANC remains the permittee, the Forest Service will not consider those changes as events requiring cancellation and reissuing of the permit. However, TANC shall notify the Forest Service within 30 days of any such changes in ownership or participation as follows:

        i. Names of officers of TANC appointed or terminated.

        ii. Names of new participants or participants who leave.

    TANC shall furnish the Forest Service:

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above clauses or when the improvements are to be removed and the area restored, the Grantee shall deliver and maintain a surety bond in the amount set by the Forest Service, which amount shall not be in excess of the estimated loss which the Forest Service would suffer upon default in performance of this work.

31. Mitigation of habitat loss for the Northern Spotted Owl will proceed as required by the Formal Section 7 Conference Opinion for Construction of the COTP issued by the U.S. Fish and Wildlife Service on May 30, 1990; and will be completed no later than December 1995 [See: Mitigation of habitat loss within HCAs under Incidental Take section of the Opinion].

32. The as built plan and profiles for the California-Oregon Transmission Project are hereby made part of this Right-of-Way. If the Grantee deems it necessary or desirable that any of them be changed, there shall be submitted for the approval of the Authorized Officer corrected, amended, supplemental, or additional plans and profiles covering the proposed changes, which upon approval shall become a part of this Right-of-Way and shall supersede, in whole or in part such exhibits heretofore made a part of this Right-of-Way.

33. The operation and Maintenance Plan for the California-Oregon Transmission Project is hereby made part of this Right-of-Way. The Operation and Maintenance Plan may be reviewed and/or revised as needed. Either party may present needed changes or additions which, after mutual agreement, will be incorporated into the Plan.

    The Grantee will submit annually a site specific schedule of planned maintenance for Forest Service approval at a meeting initiated by the authorized officer. Approval and any additional permits necessary to perform the maintenance on public land will be provided by the authorized officer in thirty (30) days.

34. The Grantee does not, by executing this document, waive any rights which it might otherwise have to contest the validity or legal enforceability of the regulations, or any portions thereof, pursuant to which the Right-of-Way herein is granted.

IN WITNESS WHEREOF, the Grantor, by its Director of Lands and Real Estate Management, P.S.W. Region, Forest Service, has executed this easement pursuant to the delegation of authority to the Chief, Forest Service, 7 CFR 2.60, and the delegation of authority by the Chief, Forest Service, dated August 22, 1984 (49 FR 34283), on the day and year first above written.

UNITED STATES OF AMERICA

By Annette Jameson
ANNETTE JAMESON
Director, Lands and
Real Estate Management
P.S.W. Region, Forest Service
Department of Agriculture

ACKNOWLEDGEMENT

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3401343

ALL-PURPOSE ACKNOWLEDGMENT CERTIFICATE

State of California

County of San Francisco

On July 6, 1994, before me, FLORDELIZ B. BIAGTAS, Notary Public, personally appeared ANNETTE JAMESON, Director for Lands and Real Estate Management Staff, Pacific Southwest Region, Forest Service, United States Department of Agriculture, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Flordeliz B. Biagtas (SEAL)

PWR1 FLORDELIZ B. BIAGTAS Comm. # 998552 NOTARY PUBLIC - CALIFORNIA City and County of San Francisco My Comm. Expires Jun. 27, 1997 PWR1

STATE OF CALIFORNIA
COUNTY OF SACRAMENTO

On this 25th day of MAY in the year of 1994, before me, the undersigned, a Notary Public in and for said State, personally appeared MICHAEL W. McDONALD, personally known to me (or proved on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they excuted the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

OFFICIAL SEAL SHIRLEY M. KIMMEL NOTARY PUBLIC CALIFORNIA SACRAMENTO COUNTY MY COMM. EXPIRES SEPT. 20,1994

WITNESS my hand and official seal.

Notary public in and for said State.

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COTP: FINAL RIGHT-OF-WAY

94013429

This grant of RIGHT-OF-WAY is hereby accepted; subject to the terms and conditions set forth in paragraphs 1 through 34 set out above and Exhibits A through F attached hereto and made a part of this permit. The Grantee hereby agrees to comply with the terms and conditions of this RIGHT-OF-WAY.

Transmission Agency of Northern California, a Joint Powers Agency of California.

_____, _____

By Michael W. McDonald
MICHAEL W. McDONALD, Chairman

ACKNOWLEDGEMENT

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

No. 5

State of CALIFORNIA
County of SACRAMENTO

On 5-25-94 (DATE) before me, SHIRLEY M. KIMMEL NOTARY PUBLIC (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"),

personally appeared MICHAEL W. McDONALD (NAME(S) OF SIGNER(S)),

☒ personally known to me - **OR** - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

OFFICIAL SEAL
SHIRLEY M. KIMMEL
NOTARY PUBLIC CALIFORNIA
SACRAMENTO COUNTY
MY COMM. EXPIRES SEPT [illegible]

WITNESS my hand and official seal.

SIGNATURE OF NOTARY

OPTIONAL SECTION

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ INDIVIDUAL
☐ CORPORATE OFFICER(S)
_____ TITLE(S)
☐ PARTNER(S) ☐ LIMITED ☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☒ OTHER: CHAIRMAN

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

OPTIONAL SECTION

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED AT RIGHT:

Though the data requested here is not required by law, it could prevent fraudulent reattachment of this form.

TITLE OR TYPE OF DOCUMENT RIGHT OF WAY
NUMBER OF PAGES 11 DATE OF DOCUMENT _____
SIGNER(S) OTHER THAN NAMED ABOVE _____

BK0402PG0548

EXHIBIT A

CALIFORNIA-OREGON TRANSMISSION PROJECT
LOCATION MAP

see attached map

EXHIBIT A

CALIFORNIA-OREGON TRANSMISSION PROJECT
LOCATION MAP

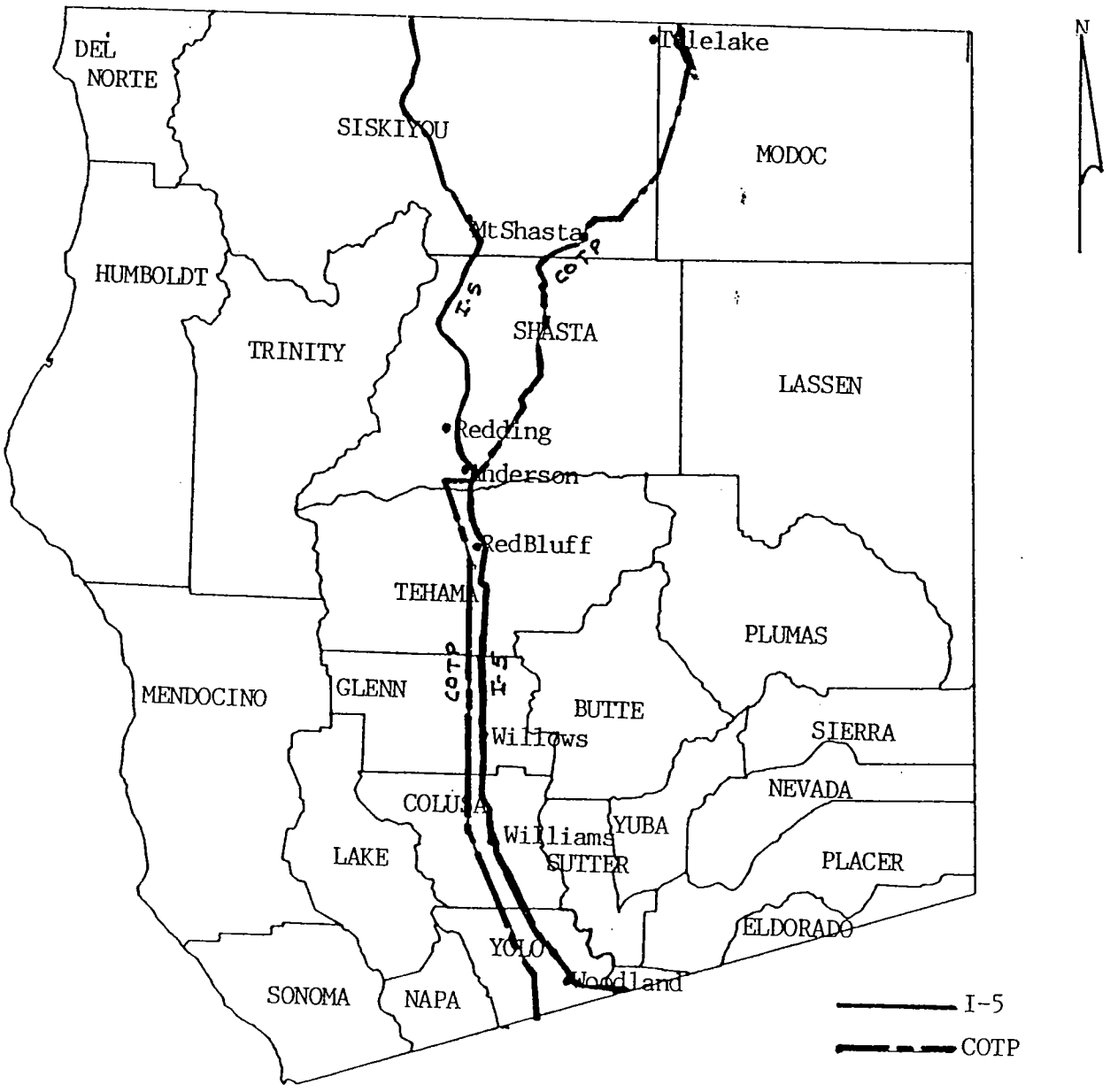


EXHIBIT B

LEGAL DESCRIPTION OF THE TRANSMISSION CORRIDOR

COUNTY	FOREST	LEGAL DESCRIPTION	TOWER #	LINEAR FEET	ACRES
Modoc	Modoc	Sec. 19,20,30,31, T.46N.,R.6E.;	92-105		
Modoc	Modoc	Sec. 6, T.45N.,R.6E.;	106-107		
Modoc	Modoc	Sec. 1,12,13,24,25,35,36, T.45N.,R.5E.;	108-133		
Modoc	Modoc	Sec. 2,11,14,15,22,27,33,34, T.44N.,R.5E.;	134-163		
Modoc	Modoc	Sec. 4, T.43N.,R.5E.;	164-168		
				86,629	397.7
Siskiyou	Modoc	Sec. 12,13,23,24,26,27,33,34, T.42N.,R.4E.;	202-225		
Siskiyou	Modoc	Sec. 4,9, T.41N.,R.4E.;	226-231		
				33,694	154.7
Siskiyou	Shasta	Sec. 8,17,18,19, T.41N.,R.4E.;	232-247		
Siskiyou	Shasta	Sec. 24,25,35, T.41N.,R.3E.;	248-260		
Siskiyou	Shasta	Sec. 2,3, T.40N.,R.3E.;	261-264		
				38,443	176.5
Siskiyou	Lassen	Sec. 3,9,10, T.40N.,R.3E.;	265-269		
				4,692	21.5
Siskiyou	Shasta	Sec. 7,8,9, T.40N.,R.3E.;	270-281		
Siskiyou	Shasta	Sec. 9,10,11,12,16,17,19,20,30,31, T.40N.,R.2E.;	282-322		
Siskiyou	Shasta	Sec. 6,7, T.39N.,R.2E.;	323-331		
Siskiyou	Shasta	Sec. 12, T.39N.,R.1E.;	332-336		
Siskiyou	Shasta	Sec. 9,16, T.39N.,R.1E.;	347,350,351		
				78,695	361.3
Shasta	Shasta	Sec. 21,27,28,34, T.38N.,R.1W.;	383-402		
Shasta	Shasta	Sec. 3,10,15,22,27,34, T.37N.,R.1W.;	403-427		
Shasta	Shasta	Sec. 28,33, T.35N.,R.1W., M.D. B. & M.	466-473		
				66,923	307.3
TOTAL				309,076	1,419.0

This table can be used for calculating the annual linear right-of-way fee schedules.

EXHIBIT C.1

LEGAL DESCRIPTION OF THE TRANSPORTATION PLAN FOR OPERATION AND MAINTENANCE: MODOC NATIONAL FOREST
* See Exhibits C.3 AND C.5
** see Exhibit C. 5

COUNTY	FOREST	FS ROAD NUMBER	TANC ROAD #	BEGIN	END	LEGAL DESCRIPTION	LENGTH IN MI.	MAINT LEVEL*	JURIS-DICTION	MAP # **
Modoc	Modoc	45N26		FS Bound.	D-003	SEC 19 T.46N., R.6E.	0.25	2	FS	1
Modoc	Modoc		D-001	FS Bound.	T 93 (573)	SEC 20 T.46N., R.6E.	0.28	-	TANC	1
Modoc	Modoc		D-002	D-003	D-004	SEC 19 T.46N., R.6E.	0.4	-	TANC	1
Modoc	Modoc	45N26	D-003	193	D-012	SEC 19,30,31 T.46N., R.6E. SEC 6 T.45N., R.6E.	4.6	2	FS	1
Modoc	Modoc		D-004	D-002	T 94 (572)	SEC 19,20 T.46N., R.6E.	0.19	-	TANC	1
Modoc	Modoc		D-005	D-004	T 97 (569)	SEC 19, 20 T.46N., R.6E.	0.72	-	TANC	1
Modoc	Modoc		D-006	D-003	D-007	SEC 30 T.46N., R.6E.	0.25	-	TANC	1
Modoc	Modoc		D-007	D-006	T 101 (565)	SEC 30 T.46N., R.6E.	0.64	-	TANC	1
Modoc	Modoc		D-008	D-003	T 102 (564)	SEC 31 T.46N., R.6E.	0.20	-	TANC	1
Modoc	Modoc		D-009	D-003	T.104 (562)	SEC 31 T.46N., R.6E.	0.19	-	TANC	1
Modoc	Modoc		D-010	D-011	T 106 (561)	SEC 31 T.46N., R.6E. SEC 6 T.45N., R.6E.	0.32	-	TANC	1
Modoc	Modoc		D-011	D-012	T 109 (557)	SEC 6 T.45N., R.6E. SEC 1 T.45N., R.5E.	0.97	-	TANC	1
Modoc	Modoc	45N27	D-012	HWY 139	D-019	SEC 5,6,7,8 T.45N., R.6E. SEC 12,13,24 T.45N., R.5E.	3.75	2	FS	1
Modoc	Modoc		D-013	D-012	T 110 (556)	SEC 12 T.45N., R.5E.	0.48	-	TANC	1
Modoc	Modoc		D-014	D-012	T 113 (553)	SEC 12 T.45N., R.5E.	0.04	-	TANC	1
Modoc	Modoc		D-015	D-012	T 114 (552)	SEC 12 T.45N., R.5E.	0.07	-	TANC	1
Modoc	Modoc		D-016	D-012	T 115 (551)	SEC 13 T.45N., R.5E.	0.11	-	TANC	2
Modoc	Modoc		D-017	D-012	T 117 (549)	SEC 13 T.45N., R.5E.	0.27	-	TANC	2
Modoc	Modoc		D-018	D-012	T 121 (545)	SEC 13,14 T.45N., R.5E.	0.71	-	TANC	2
Modoc	Modoc		D-019	D-012	T 123 (543)	SEC 24 T.45N., R.5E.	0.62	-	TANC	2
Modoc	Modoc		D-021	D-019	T 122 (544)	SEC 24 T.45N., R.5E.	0.20	-	TANC	2
Modoc	Modoc		D-022	45N32	T 125 (541)	SEC 25,36 T.45N., R.5E.	1.0	-	TANC	2
Modoc	Modoc		D-023	D-022	T 127 (539)	SEC 25 T.45N, R5E.	0.30	-	TANC	2
Modoc	Modoc		D-025	45N11	T 128 (538)	SEC 25,36 T.45N., R.5E.	0.23	-	TANC	2
Modoc	Modoc	45N11		45N32	D-024	SEC 36 T.45N., R.5E. SEC 1 T.44N., R.6E.	1.8	2	FS	2
Modoc	Modoc		D-024	45N11	T 131 (535)	SEC 35,36 T.45N., R.5E.	0.38	-	TANC	2
Modoc	Modoc		D-026	D-027	T 132 (534)	SEC 35 T.45N., R.5E. SEC 2 T.44N., R.5E.	0.48	-	TANC	2
Modoc	Modoc		D-027	45N32	T 134 (532)	SEC 2 T.44N., R.5E.	0.57	-	TANC	2
Modoc	Modoc		D-028	45N32	T 135 (531)	SEC 2 T.44N., R.5E.	0.57	-	TANC	2
Modoc	Modoc		D-029A	45N32	T 138 (528)	SEC 2 T.44N., R.5E.	0.15	-	TANC	2
Modoc	Modoc	45N32		48N04	D-022	SEC 1,2 T.44N., R.5E.	1.52	2	FS	2
Modoc	Modoc		D-029	T144(522)	T 139 (527)	SEC 11,14 T.44N., R.5E.	1.12	-	TANC	2
Modoc	Modoc		D-030	D-031	D-029	SEC 14 T.44N., R.5E.	0.19	-	TANC	2
Modoc	Modoc		D-031	44N25	D-030	SEC 14 T.44N., R.5E.	0.47	-	TANC	2
Modoc	Modoc	44N25		44N17	44N25A	SEC 13,14,15,24 T.44N., R.5E. SEC 19 T.44N., R.6E.	2.5	2	FS	2
Modoc	Modoc	44N25A		44N25	D-064	SEC 15 T.44N., R.5E.	0.37	2	FS	2
Modoc	Modoc		D-032	44N25A	T 148 (518)	SEC 15,22 T.44N., R.5E.	0.26	-	TANC	3
Modoc	Modoc		D-033	D-064	T 150 (516)	SEC 22 T.44N., R.5E.	0.36	-	TANC	3
Modoc	Modoc		D-034	D-064	T 152 (514)	SEC 22 T.44N., R.5E.	0.09	-	TANC	3
Modoc	Modoc		D-035	D-064	T 153 (513)	SEC 22 T.44N., R.5E.	0.24	-	TANC	3

EXHIBIT C.1 continued

* See Exhibits C.3 AND C.5
** see Exhibit C. 5

COUNTY	FOREST	FS ROAD NUMBER	TANC ROAD #	BEGIN	END	LEGAL DESCRIPTION	LENGTH IN MI.	MAINT LEVEL*	JURIS-DICTION	MAP # **
Modoc	Modoc		D-064	45N25A	D-035	SEC 15,22 T.44N., R.5E.	0.95	-	TANC	3
Modoc	Modoc	44N77		44N17	44N26	SEC 26,27,35 T.44N., R.5E.	1.3	3	FS	3
Modoc	Modoc		D-036	44N17	T 154 (512)	SEC 27 T.44N., R.5E.	0.62	-	TANC	3
Modoc	Modoc		D-037	44N17	T 157 (509)	SEC 27 T.44N., R.5E.	0.02	-	TANC	4
Modoc	Modoc	44N69Y		44N17	D-038	SEC 27,34 T.44N., R.5E.	0.23	2	FS	4
Modoc	Modoc		D-038	44N69Y	D-039	SEC 34 T.44N., R.5E.	0.11	-	TANC	4
Modoc	Modoc		D-039	D-038	T 158 (508)	SEC 27,34 T.44N., R.5E.	0.19	-	TANC	4
Modoc	Modoc		D-040	D-038	T 159 (507)	SEC 34 T.44N., R.5E.	0.11	-	TANC	4
Modoc	Modoc	44N80	D-041	44N26	44N77	SEC 34 T.44N., R.5E. SEC 3 T.43N., R.5E.	2.4	2	FS	4
Modoc	Modoc		D-042	44N58	T 162 (504)	SEC 33,34 T.44N., R.5E.	0.19	-	TANC	4
Modoc	Modoc		D-043	44N58	T 163 (503)	SEC 33 T.44N., R.5E.	0.07	-	TANC	4
Modoc	Modoc		D-044	44N58	T 165 (501)	SEC 33 T.44N., R.5E. SEC 4 T.43N., R.5E.	0.27	-	TANC	4
Modoc	Modoc	44N58		D-041	D-044	SEC 33,34 T.44N., R.5E.	0.25	2	FS	4
Modoc	Modoc	44N26		44N77	D-047	SEC 3,4 T.43N., R.5E. SEC 34 T.44N., R.5E.	2.8	2	FS	4
Modoc	Modoc		D-045	44N26	D-046	SEC 4 T.43N., R.5E.	0.09	-	TANC	4
Modoc	Modoc		D-046	D-045	T 166 (500)	SEC 4 T.43N., R.5E.	0.36	-	TANC	4
Modoc	Modoc		D-047	44N26	T 168 (498)	SEC 4 T.43N., R.5E.	0.14	-	TANC	4
Siskiyou	Modoc	42N28		D-049	42N56	SEC 13 T.42N., R.4E.	1.2	2	FS	4
Siskiyou	Modoc		D-049	42N28	T 202 (464)	SEC 12,13 T.42N., R.4E.	0.04	-	TANC	5
Siskiyou	Modoc		D-050	42N28	T 203 (463)	SEC 13 T.42N., R.4E.	0.09	-	TANC	5
Siskiyou	Modoc		D-051	42N28	T 204 (462)	SEC 13 T.42N., R.4E.	0.44	-	TANC	5
Siskiyou	Modoc	42N56		42N28	42N25	SEC 13,14 T.42N., R.4E.	0.9	4	FS	5
Siskiyou	Modoc		D-052	42N56	T 208 (458)	SEC 13 T.42N., R.4E.	0.28	-	TANC	5
Siskiyou	Modoc		D-053	D-052	T 207 (459)	SEC 13 T.42N., R.4E.	0.09	-	TANC	5
Siskiyou	Modoc		D-054	D-052A	T 209 (457)	SEC 24 T.42N., R.4E.	0.06	-	TANC	5
Siskiyou	Modoc		D-052A	42N25	T 210 (456)	SEC 23,24 T.42N., R.4E.	0.44	-	TANC	5
Siskiyou	Modoc	42N25		42N56	42N66	SEC 14,23,24,25 T.42N., R.4E.	1.7	2	FS	5
Siskiyou	Modoc		D-055	42N25	T 213 (453)	SEC 23, 24 T.42N., R.4E.	0.57	-	TANC	5
Siskiyou	Modoc		D-056A	D-055	T 214 (452)	SEC 23 T.42N., R.4E.	0.42	-	TANC	5
Siskiyou	Modoc	42N66		42N25	Corridor	SEC 25,26,27,34 T.42N., R.4E.	3.7	2	FS	5
Siskiyou	Modoc		D-056	42N66	T 215 (451)	SEC 26 T.42N., R.4E.	0.46	-	TANC	5
Siskiyou	Modoc	42N66A	D-057	42N66	T 217 (449)	SEC 26 T.42N., R.4E.	0.12	2	FS	5
Siskiyou	Modoc		D-059	42N38	T 219 (447)	SEC 27 T.42N., R.4E.	0.11	-	TANC	5
Siskiyou	Modoc		D-060	42N38	T 220 (446)	SEC 27 T.42N., R.4E.	0.11	-	TANC	5
Siskiyou	Modoc	42N38		42N66	D-059	SEC 27 T.42N., R.4E.	0.3	2	FS	5
Siskiyou	Modoc		D-061	42N66	T 221 (445)	SEC 33,34 T.42N., R.4E.	1.27	-	TANC	5
Siskiyou	Modoc		D-062	42N66	S-T.N.F.	SEC 33,34 T.42N., R.4E. SEC 4,9 T.41N., R.4E.	1.44	-	TANC	6

EXHIBIT C.2 continued

* See Exhibits C.3 AND C.5
** see Exhibit C. 5

COUNTY	FOREST	FS ROAD NUMBER	TANC ROAD #	BEGIN	END	LEGAL DESCRIPTION	LENGTH IN MI.	MAINT LEVEL*	JURIS-DICTION	MAP # **
Siskiyou	Shasta	FA 03		FA 49	41N36	SEC 1,2,3,9,10 T.40N., R.2E. SEC 2,3,4,5,6,9 T.40N., R.3E.	9.1	2	FS	8
Siskiyou	Shasta	42N80B	S-052	42N80	T 297 (369)	SEC 9 T.40N., R.2E.	0.1	2	FS	8
Siskiyou	Shasta	42N80A	S-053	42N80A	T 295 (371)	SEC 9 T.40N., R.2E.	0.2	2	FS	8
Siskiyou	Shasta	42N80		FA 49	42N80A	SEC 9 T.40N., R.2E.	0.3	2	FS	8
Siskiyou	Shasta	40N58C	S-051	40N58	T 298 (368)	SEC 9 T.40N., R.2E.	0.3	2	FS	8
Siskiyou	Shasta	40N58		40N08	FA 49	SEC 9,16,17 T.40N., R2E.	1.7	2	FS	9
Siskiyou	Shasta	40N08		42N04	40N58	SEC 17 T.40N., R.2E.	0.2	2	FS	9
Siskiyou	Shasta	42N04A	S-049	42N04	T 306 (360)	SEC 17 T.40N., R.2E.	0.4	2	FS	9
Siskiyou	Shasta	40N23XA	S-046	40N23X	T 308 (358)	SEC 20 T.40N., R.2E.	0.1	2	FS	9
Siskiyou	Shasta	40N23X	S-047	42N04	T 309 (357)	SEC 19,20 T.40N., R.2E.	0.3	2	FS	9
Siskiyou	Shasta	42N04G	S-043	42N04	T 310 (356)	SEC 19 T.40N., R.2E.	0.1	2	FS	9
Siskiyou	Shasta	40N20X		40N10	40N09	SEC 19,30 T.40N., R.2E.	1.0	2	FS	9
Siskiyou	Shasta	40N09		40N10	T 317 (349)	SEC 30 T.40N., R.2E.	0.6	2	FS	10
Siskiyou	Shasta	40N82Y		40N10	40N10	SEC 30,31 T.40N., R.2E.	1.4	2	FS	10
Siskiyou	Shasta	40N82YB		40N82Y	40N10	SEC 6 T.39N., R.2E. SEC 31 T.40N., R.2E.	0.6	2	FS	10
Siskiyou	Shasta	40N10F		40N10	40N10H	SEC 6 T.39N., R.2E.	0.1	2	FS	10
Siskiyou	Shasta	40N10H		40N10	40N10F	SEC 6,7 T.39N., R.2E.	1.0	2	FS	10
Siskiyou	Shasta	40N10L	S-045	40N10	T 329 (337)	SEC 6 T.39N., R.2E.	0.2	2	FS	10
Siskiyou	Shasta	40N10K	S-039	40N10	T 330 (336)	SEC 6 T.39N., R.2E.	0.3	2	FS	10
Siskiyou	Shasta	40N10		HWY 89	42N04	SEC 6,7,18,19 T.39N., R2E. SEC 19,20,30,31 T.40N., R.2E.	6.6	2	FS	10
Siskiyou	Shasta	39N56B	S-048	39N56	T 331 (335)	SEC 7 T.39N., R.2E.	0.2	2	FS	10
Siskiyou	Shasta	39N56		42N04	40N10	SEC 6,7 T.39N., R.2E.	2.1	2	FS	10
Siskiyou	Shasta	42N04Y	C-25E	42N04	T 332 (334)	SEC 1,12 T.39N., R.1E.	0.6	2	FS	10
Siskiyou	Shasta	42N04G	S-042	42N04	T 333 (333)	SEC 1,12 T.39N., R.1E.	0.5	2	FS	10
Siskiyou	Shasta	42N04		HWY 89	39N56	SEC 1 T.39N., R.1E. SEC 17,20 T.40N., R2E.	1.9	2	FS	10
Siskiyou	Shasta	39N92	S-037	HWY 89	T 334 (332)	SEC 12 T.39N., R.1E.	0.3	2	FS	10
Siskiyou	Shasta	39N90E	S-036	39N90	T 335 (331)	SEC 12 T.39N., R.1E.	0.1	2	FS	10
Siskiyou	Shasta	39N90D	S-035	39N90	T 336 (330)	SEC 12 T.39N., R.1E.	0.1	2	FS	10
Siskiyou	Shasta	39N90		HWY 89	38N11	SEC 1,12 T.39N., R.1E.	1.4	2	FS	10
Siskiyou	Shasta	38N28YB	C-24D	38N28Y	T 351 (315)	SEC 16 T.39N., R.1E.	0.4	2	FS	10
Siskiyou	Shasta	38N28Y		39N11	38N28YB	SEC 16 T.39N., R.1E.	0.1	2	FS	11
Siskiyou	Shasta	39N11Y		39N90	38N28Y	SEC 10,11,15,16 T.39N., R.1E.	3.0	2	FS	11
Shasta	Shasta	39N06H	S-033	39N06	T 387 (276)	SEC 21 T.38N., R.1W.	0.1	2	FS	11
Shasta	Shasta	39N06G	S-032	39N06	T 388 (275)	SEC 21 T.38N., R.1W.	0.2	2	FS	11
Shasta	Shasta	38N51C	S-031	38N51	T 389 (274)	SEC 21 T.38N., R.1W.	0.2	2	FS	11
Shasta	Shasta	38N51		39N06	38N51C	SEC 21 T.38N., R.1W.	0.2	2	FS	11
Shasta	Shasta	39N06F	S-030	39N06	T 391 (272)	SEC 21 T.38N., R.1W.	0.1	2	FS	11
Shasta	Shasta	38N26YA	S-029	38N26Y	T 395 (269)	SEC 27,28 T.38N., R.1W.	0.2	2	FS	11
Shasta	Shasta	38N26Y		38N52	T 396(268A)	SEC 27,28 T.38N., R.1W.	0.2	2	FS	12
Shasta	Shasta	38N25YA		38N25Y	T 393 (270)	SEC 28 T.38N., R.1W.	0.2	2	FS	11
Shasta	Shasta	38N25Y		38N52	T 392 (271)	SEC 21,28 T.38N., R.1W.	1.5	2	FS	11
Shasta	Shasta	38N52		39N06	T 394(269A)	SEC 28 T.38N., R.1W.	3.6	2	FS	11

EXHIBIT C.2 continued

* See Exhibits C.3 AND C.5
** see Exhibit C. 5

COUNTY	FOREST	FS ROAD NUMBER	TANC ROAD #	BEGIN	END	LEGAL DESCRIPTION	LENGTH IN MI.	MAINT LEVEL*	JURIS-DICTION	MAP # **
Shasta	Shasta	39N06		FA 11	HWY 89	SEC 15,16,21,28,29,32,33 T.38N.,R.1W. SEC 5,6,7 T.39N., R.1E. SEC 32 T.40N., R.1E.	7.7	2	FS	12
Shasta	Shasta	38N30YB		38N30Y	T 398 (267)	SEC 27 T.38N., R.1W.	0.5	2	FS	12
Shasta	Shasta	38N30YA		38N30Y	T 399 (266)	SEC 27 T.38N., R.1W.	0.6	2	FS	12
Shasta	Shasta	38N30Y		38N59	38N30YB	SEC 27,34 T.38N., R.1W.	2.0	2	FS	12
Shasta	Shasta	38N29YA	S-027	38N29Y	T 400 (265)	SEC 34 T.38N., R.1W.	0.2	2	FS	12
Shasta	Shasta	38N29Y	S-025	38N59	T 401 (264)	SEC 34 T.38N., R.1W.	0.7	2	FS	12
Shasta	Shasta	38N27YA	S-023	38N27Y	T 402 (262)	SEC 34 T.38N., R.1W.	0.2	2	FS	12
Shasta	Shasta	38N27Y		38N59	38N27YA	SEC 34 T.38N., R.1W.	0.2	2	FS	12
Shasta	Shasta	37N68YA	S-020	37N68Y	T 404 (260)	SEC 2,3 T.37N., R.1W.	0.1	2	FS	12
Shasta	Shasta	37N68Y	S-022	37N31Y	T 403 (261)	SEC 2 T.37N., R.1W.	0.1	2	FS	12
Shasta	Shasta	37N31YB		37N31Y	T 406 (258)	SEC 3 T.37N., R.1W.	0.1	2	FS	12
Shasta	Shasta	37N31YA		37N31Y	T 405 (259)	SEC 2 T.37N., R.1W.	0.2	2	FS	12
Shasta	Shasta	37N31Y		38N59	T 409 (255)	SEC 2,3,10 T.37N., R.1W.	1.8	2	FS	12
Shasta	Shasta	38N59		FA 11	FA 11	SEC 3,4 T.37N., R.1W. SEC 32,33,34 T.38N., R.1W.	4.4	2	FS	12
Shasta	Shasta	37N30YA		37N30Y	T 411 (253)	SEC 10 T.37N., R.1W.	0.3	2	FS	12
Shasta	Shasta	37N30Y		37N97	T 410 (254)	SEC 10 T.37N., R.1W.	0.9	2	FS	12
Shasta	Shasta	37N97		37N29	37N30Y	SEC 10 T.37N., R.1W.	0.2	2	FS	12
Shasta	Shasta	37N06A		37N06	T 415 (249)	SEC 15 T.37N., R.1W.	0.1	2	FS	12
Shasta	Shasta	37N06		37N29	T 416 (248)	SEC 15 T.37N., R.1W.	0.2	2	FS	12
Shasta	Shasta	37N29A		37N29	T 414 (250)	SEC 10,15 T.37N., R.1W.	0.5	2	FS	12
Shasta	Shasta	37N29B	S-018	37N29	T 413 (251)	SEC 10 T.37N., R.1W.	0.6	2	FS	12
Shasta	Shasta	37N29		FA 11	37N06	SEC 10,15 T.37N., R.1W.	2.5	2	FS	12
Shasta	Shasta	37N80A	S-017	37N80	T 417 (247)	SEC 15,22 T.37N., R.1W.	0.8	2	FS	12
Shasta	Shasta	37N80		FA 11	37N80A	SEC 22 T.37N., R.1W.	1.0	2	FS	12
Shasta	Shasta	38N11B	S-016	FA 11	T 419 (245)	SEC 22 T.37N., R.1W.	0.6	1	FS	12
Shasta	Shasta	37N07A		37N07	T 421 (243)	SEC 27 T.37N., R.1W.	0.8	1	FS	12
Shasta	Shasta	37N07	S-014	FA 11	T 427 (237)	SEC 26,27,34,35 T.37N., R.1W.	3.9	2	FS	12
Shasta	Shasta	FA 11		CO.RD.	39N06	SEC 3,4,5,6,10,15,16,22,26,27,T37N,R1W SEC 31,32,33,34, T.38N., R.1W.	18.2	3	FS	12
Shasta	Shasta	35N93A	S-008	35N93	T 469 (195)	SEC 28 T.35N., R.1W.	2.6	2	FS	16
Shasta	Shasta	35N93		35N46	35N93A	SEC 17,20,21,28 T.35N., R.1W.	4.4	2	FS	16
Shasta	Shasta	35N46		FA 17	35N93	SEC 18,19,30,31 T.35N., R.1W.	9.0	2	FS	16
Shasta	Shasta	35N46YA	S-002	35N46Y	T 473 (191)	SEC 33 T.35N., R.1W.	0.1	1	FS	16
Shasta	Shasta	35N46Y	S-001	Sec.Line	T 470 (194)	SEC 33 T.35N., R.1W.	1.6	2	FS	16
Shasta	Shasta	FA 17		CO 7H009	35N46	SEC 6,7,8, T.34N., R.1W. SEC 31 T.35N., R.1W.	6.0	3	FS	16

EXHIBIT C.3

General Relationship Between Maintenance Levels

PARAMETERS	1	MAINTENANCE LEVEL 2	3	4	5
Service Life	Intermittent Service-Closed Status	Constant Service or Intermittent Service - Open Status (Some uses may be restricted under 36 CFR 261.50)			
Traffic Type	Open for non-motorized uses. Closed to motorized traffic.	Administrative, permitted, dispersed recreation, specialized, commercial haul.	All National Forest Traffic - General Use, Commercial Haul		
Vehicle Type	Closed-N/A	High clearance, pick-up, 4x4, log trucks, etc.	All types - passenger cars to large commercial vehicles		
Traffic Volume	Closed-N/A	Traffic volume increases with maintenance level			
Typical Surface	All types	None, Native, or Aggregate -- may be dust abated		Aggregate -- usually dust abated; paved	
Travel Speed	Closed-N/A	Travel speed increases with maintenance level			
User Comfort and Convenience	Closed-N/A	Not a consider-ation	Low Priority	Moderate Priority	High Priority
Functional Classification	All Types	Local Collector	Local Collector Arterial	Local Collector Arterial	Local Collector Arterial
Traffic Service Level	Closed-N/A	D	A, B, C -- Traffic service level increases with maintenance level		
Traffic Management Strategy	Prohibit or Eliminate	Discourage or Prohibit cars. Accept or Discourage high clearance vehicles.	Encourage, Accept	Encourage	Encourage

FROM FSH 7709.58 - TRANSPORTATION SYSTEM MAINTENANCE HANDBOOK

EXHIBIT C.4

Maintenance Prescription Guidelines

Type of Activity	Code	Guidelines Level 1	Guidelines Level 2	Guidelines Level 3	Guidelines Level 4	Guidelines Level 5
General	0000	As needed.	As needed.	As needed.	As needed.	As needed.
Traveled Way	1000	Generally no work required.	Log out and brush as necessary to provide passage for planned traffic. Maintain road prism to provide for passage of high clearance vehicles.	Maintain surface to provide travel by prudent driver in standard passenger cars. Some surface roughness is tolerated. User comfort and convenience is a low priority. Maintain traveled way crown or cross slope to provide adequate drainage. Replace base course and surfacing as needed.	Maintain traveled way to provide for a moderate degree of user comfort and convenience and for protection of investment and resource values. Replace surfacing to depth required for blade maintenance and to prevent wear of the base course. Abate dust when needed.	Maintain surface to provide for protection of investment and resource values, and for a high degree of user comfort and convenience.
Shoulder	2000	Generally no work required.	Maintain only as necessary for planned traffic.	Maintain existing shoulders commensurate with traveled way.	Same as Level 3.	Maintain to the same standard as the traveled way.
Drainage	3000	As necessary to keep drainage facilities functional and prevent unacceptable environmental damage.	Same as Level 1.	Same as Level 1.	Same as Level 1.	Same as Level 1.

EXHIBIT C.4 continued

Type of Activity	Code	Guidelines Level 1	Guidelines Level 2	Guidelines Level 3	Guidelines Level 4	Guidelines Level 5
Roadway	4000	Perform only that work needed to facilitate restoration of the roadway for future use and to alleviate erosion or sedimentation on or from roadway or roadsides. Normally defer removal of brush and trees from the roadway. Vehicle traffic is not a consideration.	Manage vegetative cover as needed for planned traffic. Remove and/or repair slides and/or slumps as needed for access with high clearance vehicles or to control resource damage.	Maintain existing vegetative cover. Control vegetation to provide sight distance. Repair and/or remove slides and slumps to provide passage by prudent drivers in standard passenger cars.	Same as Level 3.	Same as Level 3.
Roadside	5000	Generally no work required.	Generally no work required.	Remove hazard trees and clean up litter.	Clean up litter in accordance with road management objectives. Remove hazard trees and perform landscape treatments as required.	Same as Level 4.

EXHIBIT C.4 continued

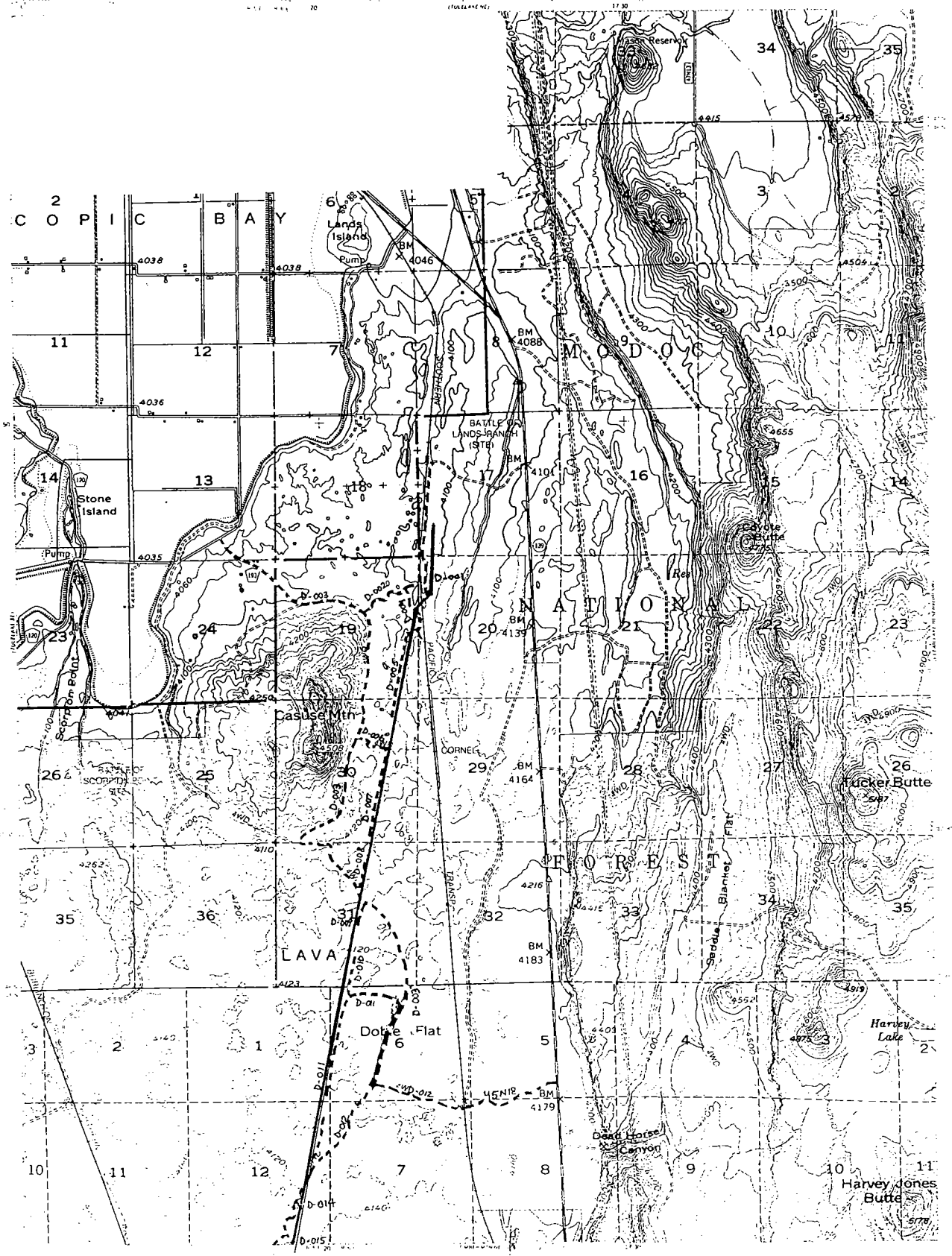
Type of Activity	Code	Guidelines Level 1	Guidelines Level 2	Guidelines Level 3	Guidelines Level 4	Guidelines Level 5
Structure	6000	Inspect and repair only those items which cannot be deferred, and that are necessary to protect investment and preserve structural integrity.	Maintain all structures to provide for the passage of planned traffic.	Maintain all structures to provide for passage of planned traffic and to preserve structure for future use. Defer noncritical items and combine to provide for a more economical project. For example, maintain defective bridge rails, running planks, and bridge guide posts on a current basis. Defer painting of bridge rails to a logical project cycle.	Same as Level 3.	Same as Level 3.
Traffic Service	7000	Ensure that physical closure devices and/or appropriate signing are in place and functional at the at the road entrance. Defer maintenance of signs within the closure until the road is opened. Correct deferred items prior to opening the road to traffic.	Install and maintain route markers; warning, regulatory, and guide signs; and other traffic control devices to provide for planned traffic and appropriate traffic management strategy.	Install and maintain route markers; warning, regulatory and guide signs; and other traffic devices to provide for planned traffic.	Same as Level 3.	**SIGNS**--Same as Level 3. **MARKINGS**--Renew centerlines, edge stripes, and other pavement and curb markings as needed to provide for planned traffic.

FROM FSH 7709.58 - TRANSPORTATION SYSTEM MAINTENANCE HANDBOOK

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

MAP 02PS0561

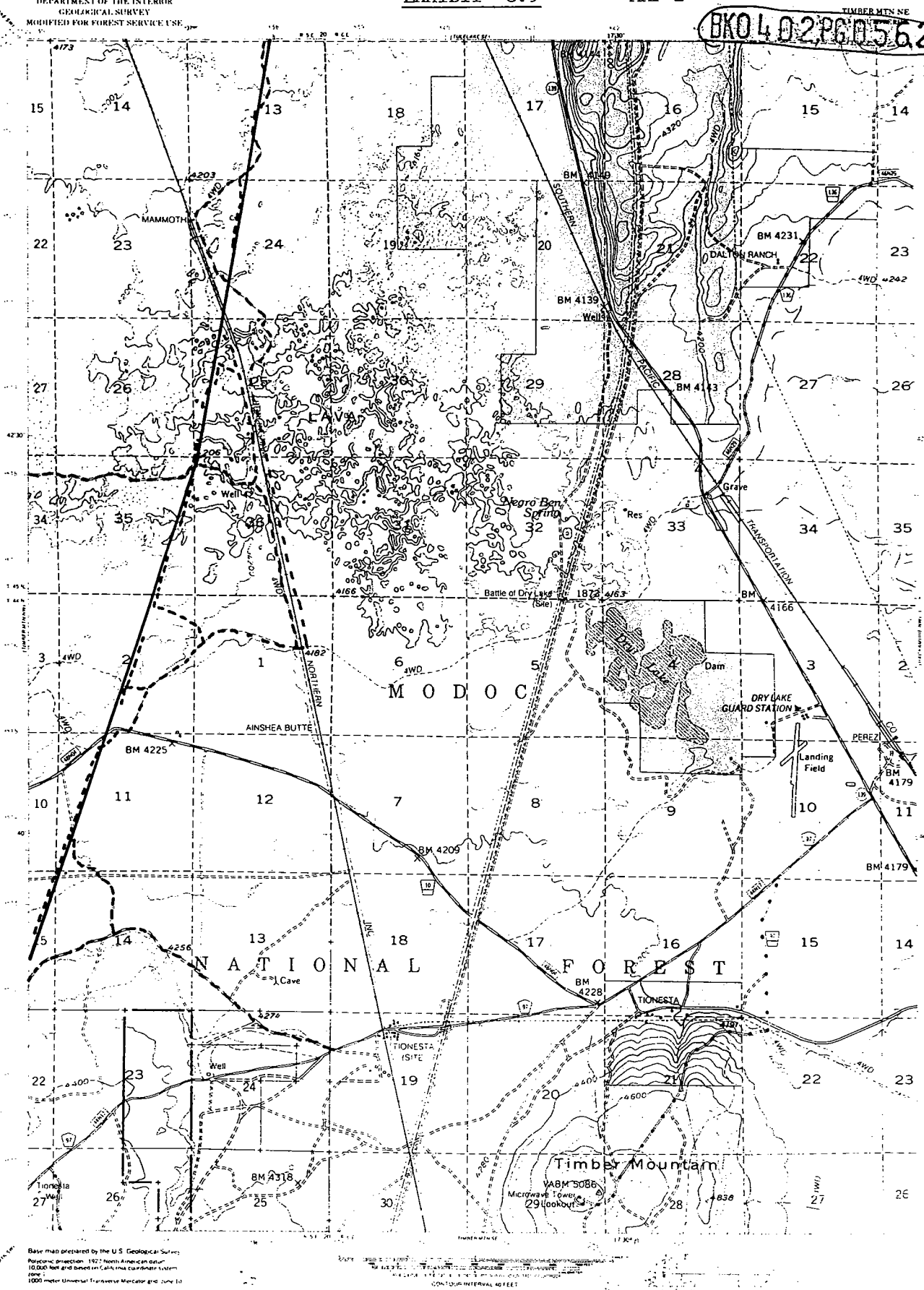


94013429

MAP 02PS0561

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5 MAP 2

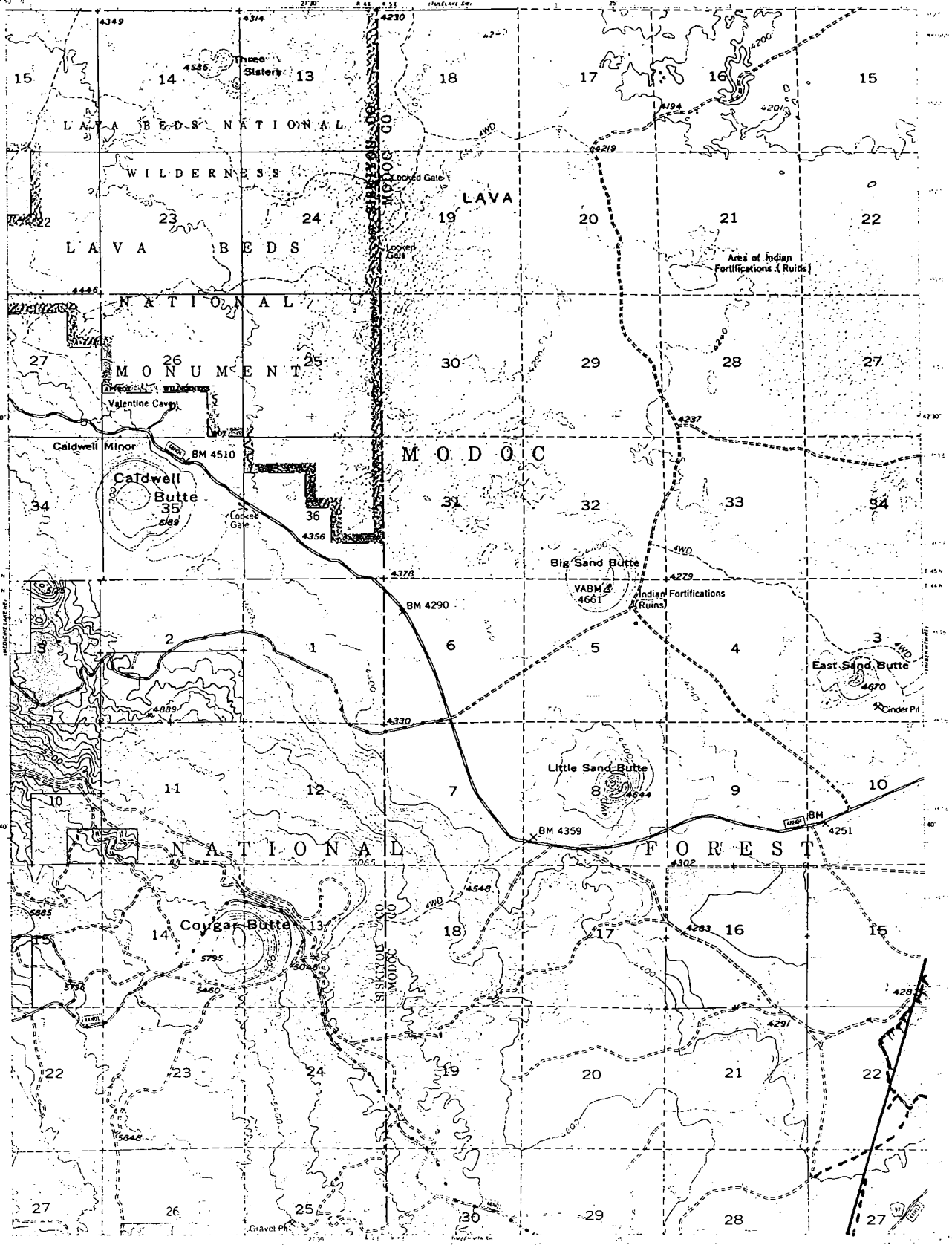


COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

MAP 3

BK 402PG0563



Base map prepared by the U.S. Geological Survey
Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zone 1
1000-meter Universal Transverse Mercator grid ticks, zone 10

CONTOUR INTERVAL 40 FEET

INTERMEDIATE EDITION

TOWNSHIP AND SECTION LINE CLASSIFICATION
Surveyed Location Reliable
Surveyed Location Approximate
Unsurveyed Projection

National Forest Boundary
Primary Highway
Secondary Highway
Improved Road, Paved
Improved Road, Gravel
Improved Road, Dirt
Unimproved Road, Dirt
Trail
Road Location Approximate

Interstate
U.S. Highway
State Highway
County Road
Forest Road
Forest Road
Trail
Trail Location Approximate

TIMBER MTN NW
712-2C
REVISED 1987

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BK 402PG0563

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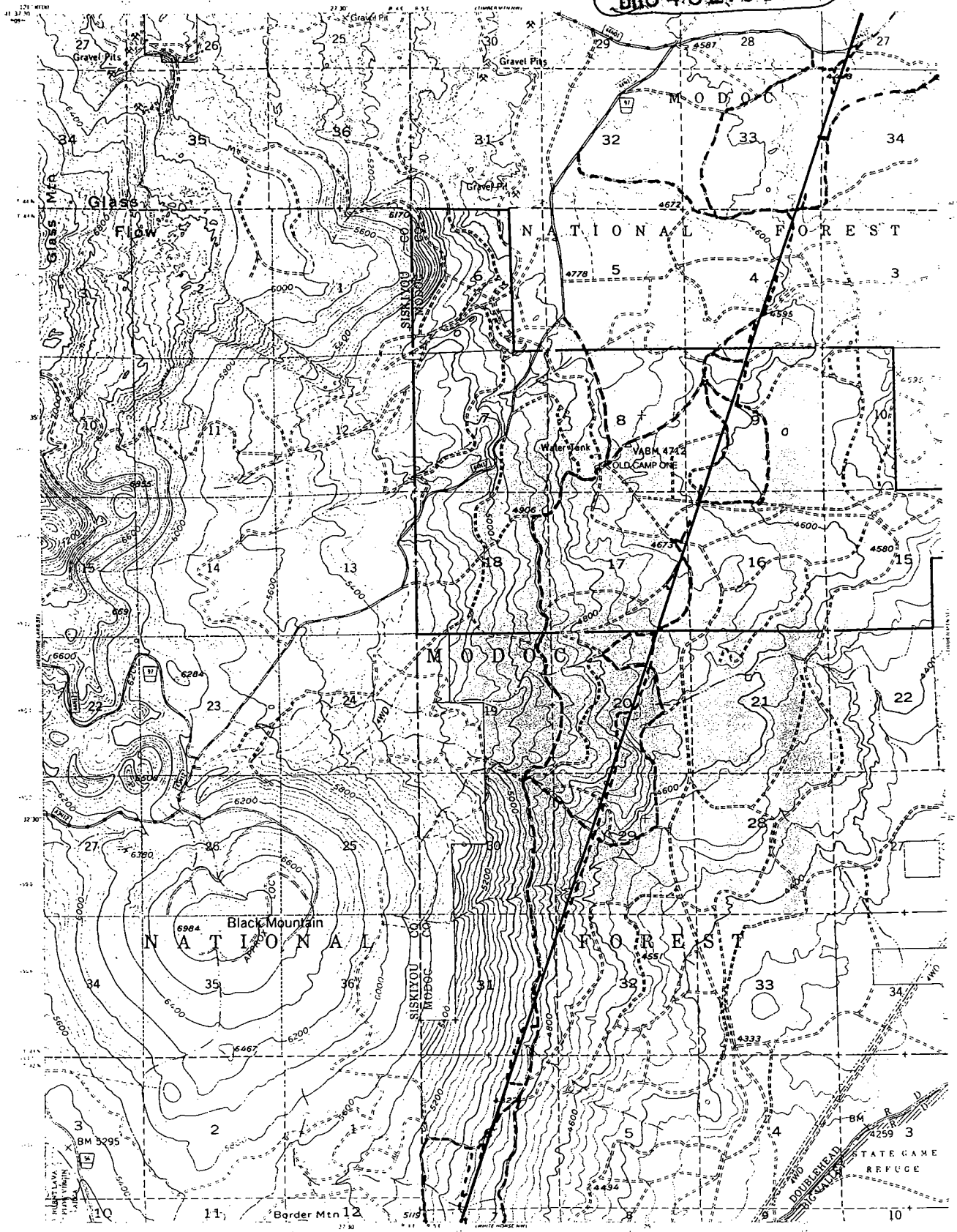
COTP: FINAL RIGHT-of-WAY
EXHIBIT C.5

MAI

BKO 402PG0564



Base map prepared by the U.S. Geological Survey
Polyconic projection. 1927 North American datum
10,000 foot grid based on California coordinate system, zone I
1000 meter Universal Transverse Mercator grid, zone 10

CONTOUR INTERVAL 40 FEET

LEGEND

- National Forest Boundary
- State/National Forest Lands
- Primary Highway
- Secondary Highway
- Improved Road, Paved
- Improved Road, Gravel
- Improved Road, Dirt
- Unimproved Road, Dirt
- Trail
- Road, Location Approximate
- Interstate
- U.S. Highway
- State Highway
- County Road
- Primary Forest Route
- Forest Road
- Forest Trail
- Trail, Location Approximate

TOWNSHIP AND SECTION LINE CLASSIFICATION

- Surveyed, Location Reliable
- Surveyed, Location Approximate
- Unsurveyed, Protraction

INTERMEDIATE EDITION

Modification by USGS base map by the Geometronics Service Center from 1980 aerial photographs and 1984 field checks furnished by the Pacific Southwest Region

TIMBER MTN SW

712-3C

3203...124

BKO 402PG0561

27

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MODIFIED FOR FOREST SERVICE USE

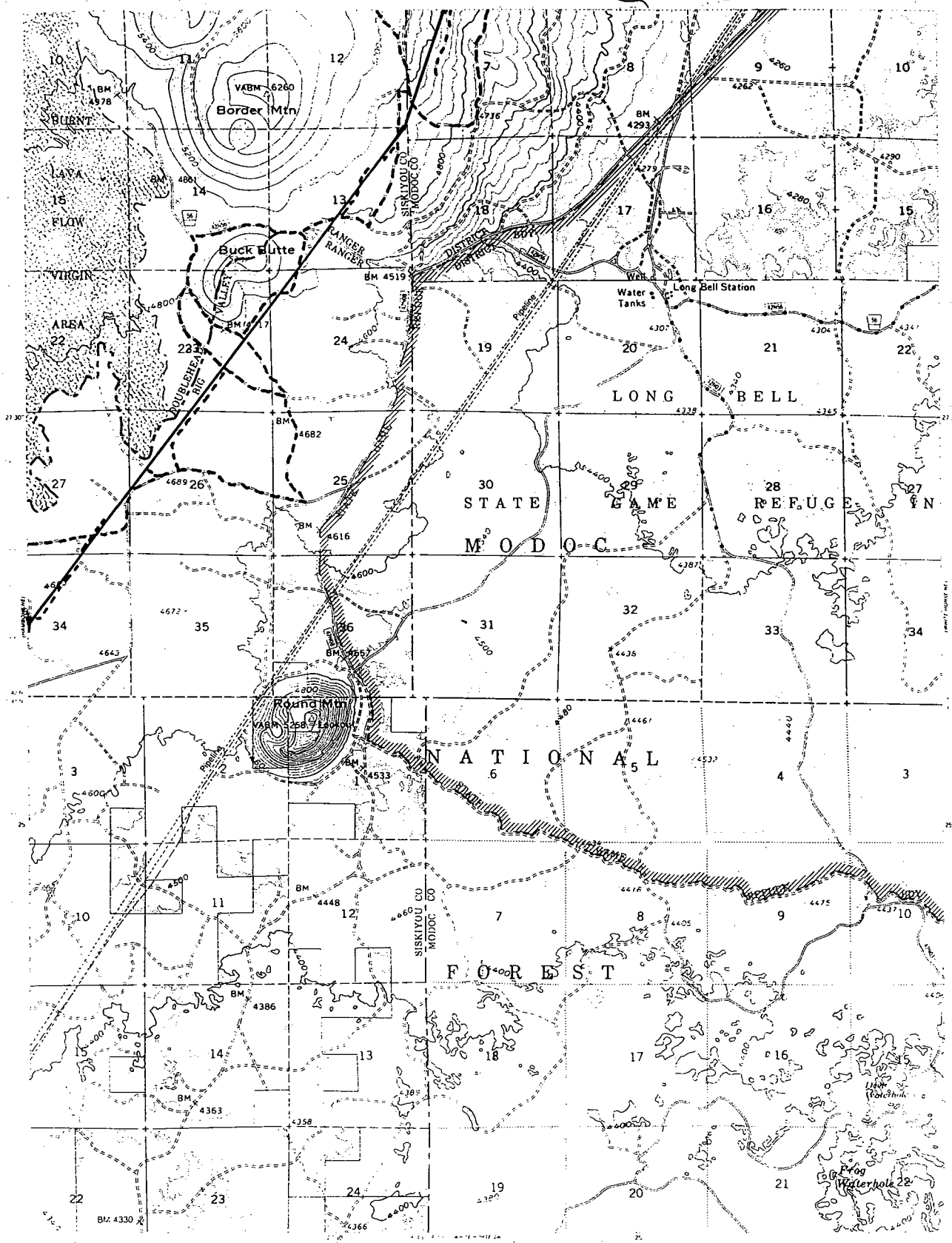
COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

BK0402PG0565

WHITE HORSE NW
7.5 MINUTE SERIES

94013429



Base map prepared by the U.S. Geological Survey
Polyconic projection. 1927 North American datum
10,000 foot grid based on California coordinate system zone 1
1000 meter Universal Transverse Mercator grid, zone 10

INTERMEDIATE EDITION

CONTOUR INTERVAL 40 FEET

LEGEND

National Forest Boundary

TOWNSHIP AND SECTION LINE CLASSIFICATION
Surveyed: Location Reliable
Surveyed: Location Approximate
Unsurveyed: Protraction

Primary Highway
Secondary Highway
Improved Road: Paved
Improved Road: Gravel
Improved Road: Dirt
Unimproved Road: Dirt
Trail
Road: Location Approximate

Interstate
U.S. Highway
State Highway
County Road
Primary Forest Route
Forest Road
Forest Trail
Trail: Location Approximate

MODOC NATIONAL FOREST

WHITE HORSE NW

695-2C

3203 PAGE 125

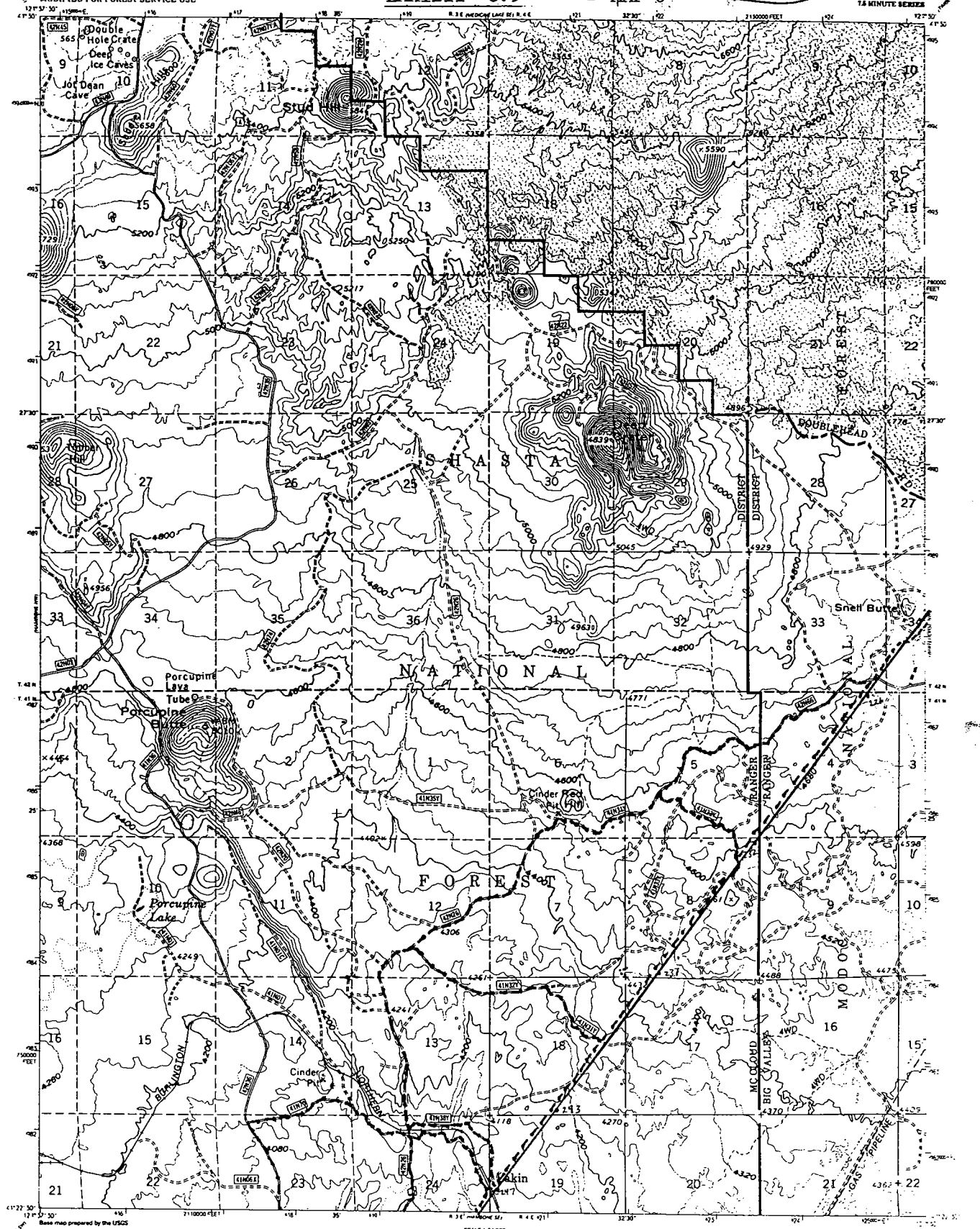
BK0402PG0565

28

COTP: FINAL RIGHT-OF-WAY

BK0402PG0566

EXHIBIT C.5 MAP 6

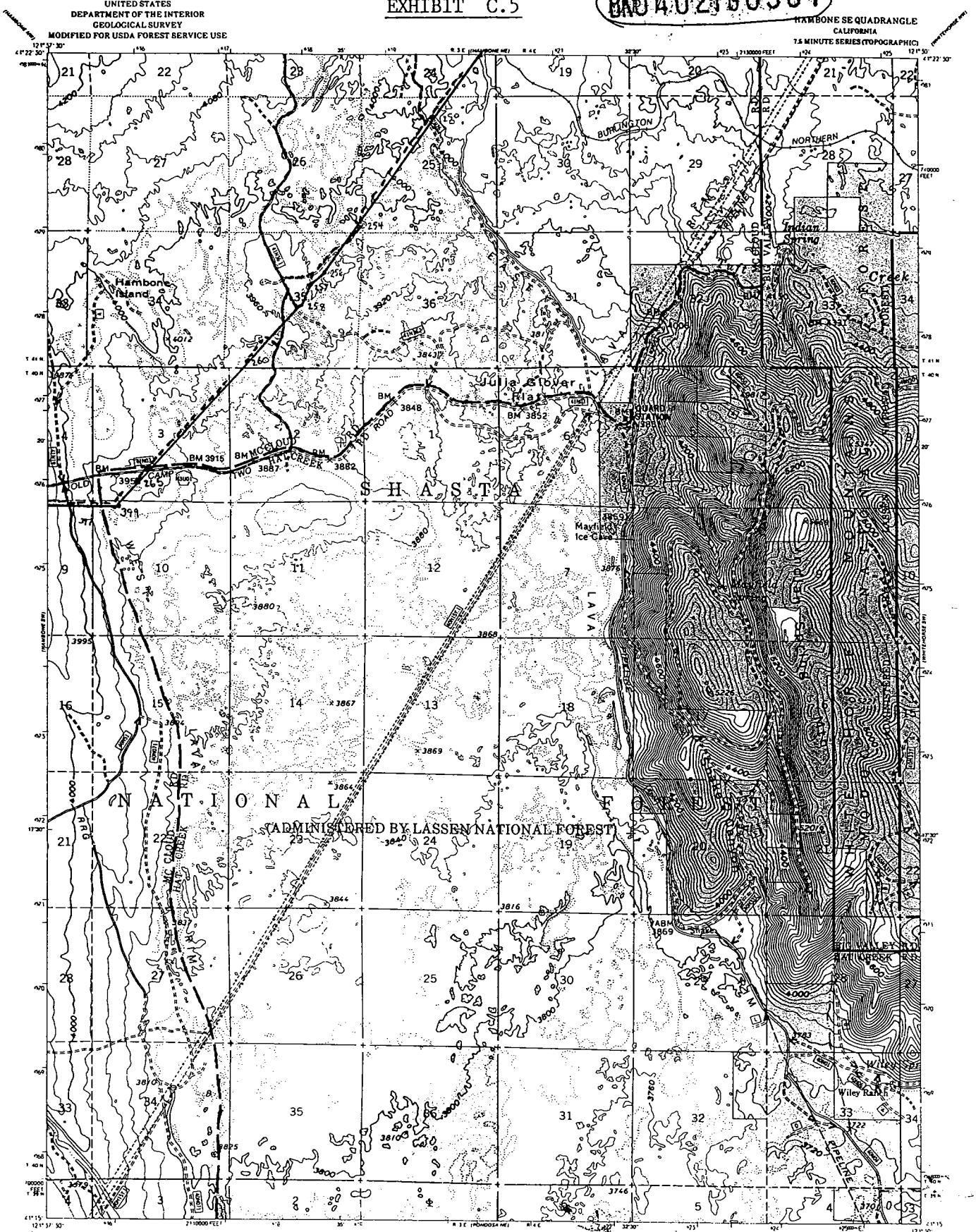


BK0402PG0567

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

BK01402PG0567

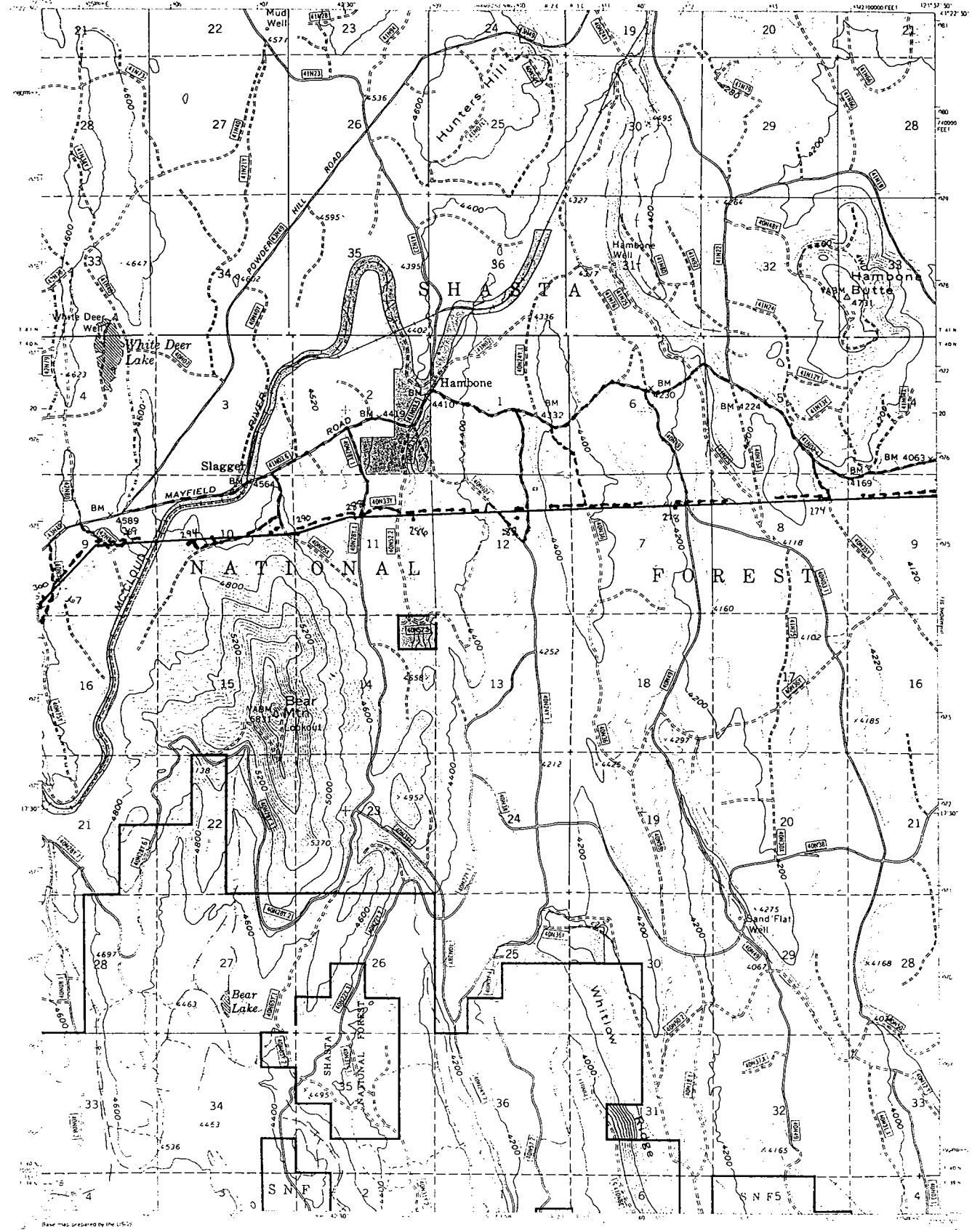


BK01402PG0567

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

BK0L402PG0568



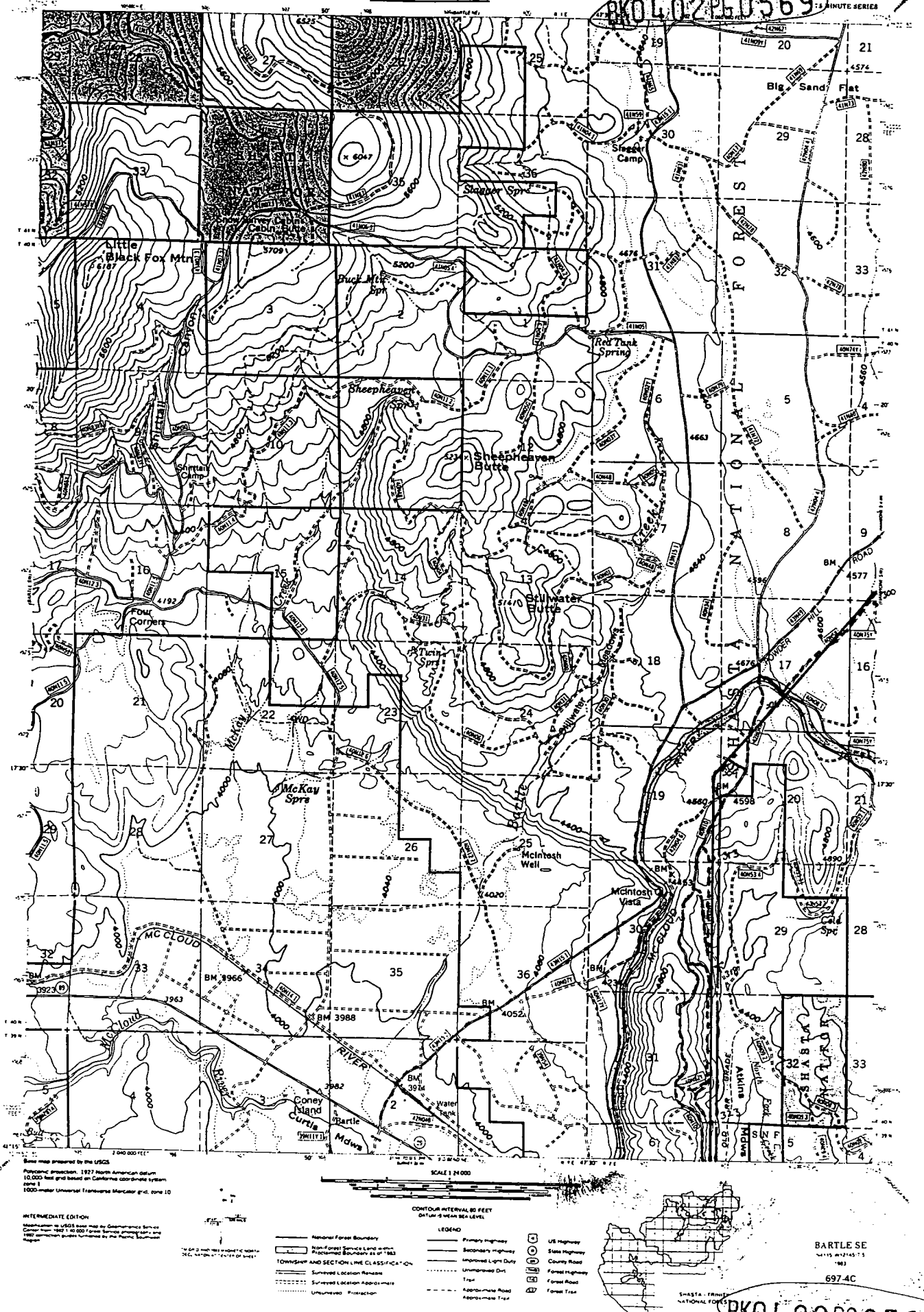
3203 PAGE 128

BK0L402PG0568

31

COTP: FINAL RIGHT-OF-WAY

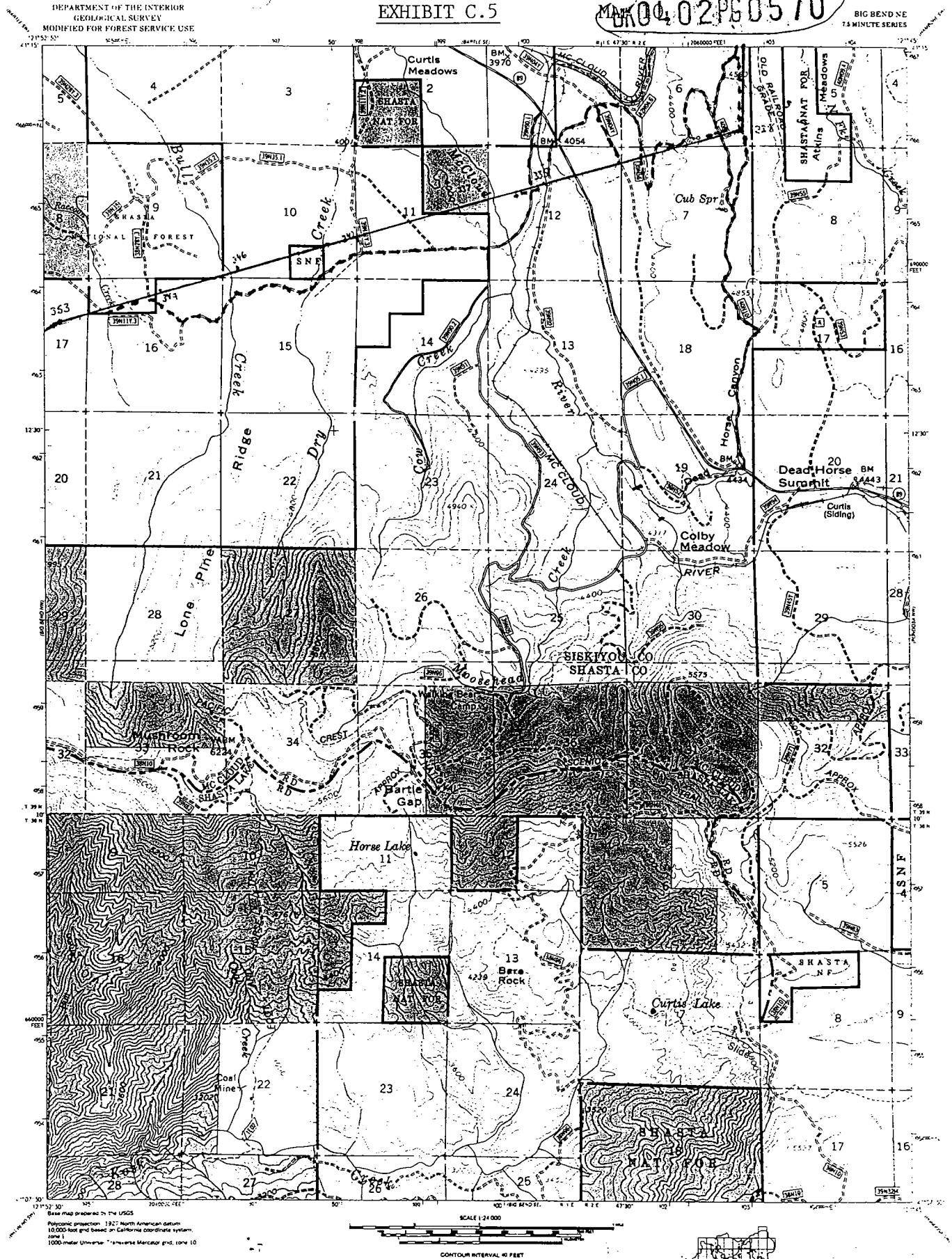
EXHIBIT C.5



BK0402PG0569

COTP: FINAL RIGHT-OF-WAY

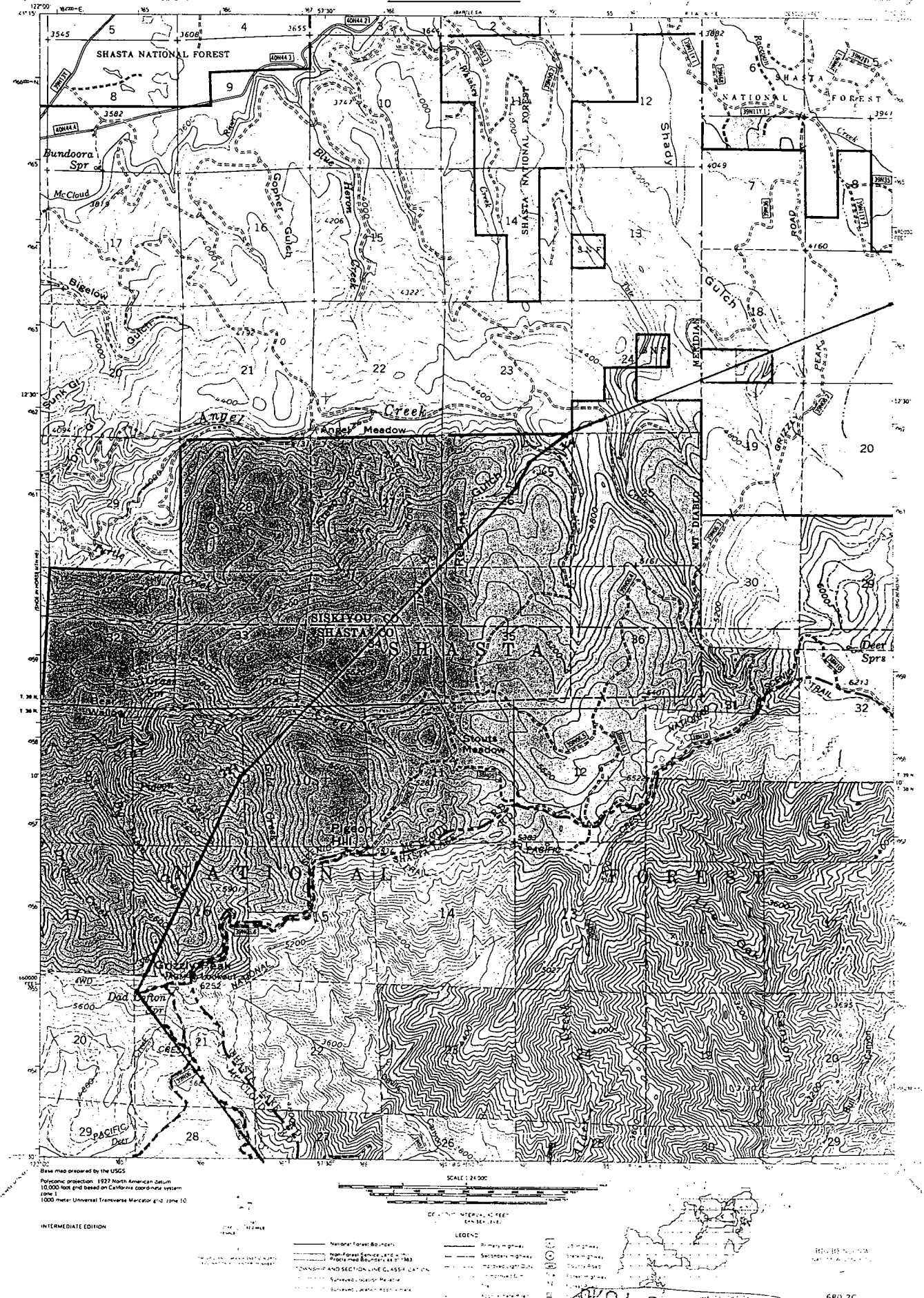
EXHIBIT C.5



COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

MAP 11



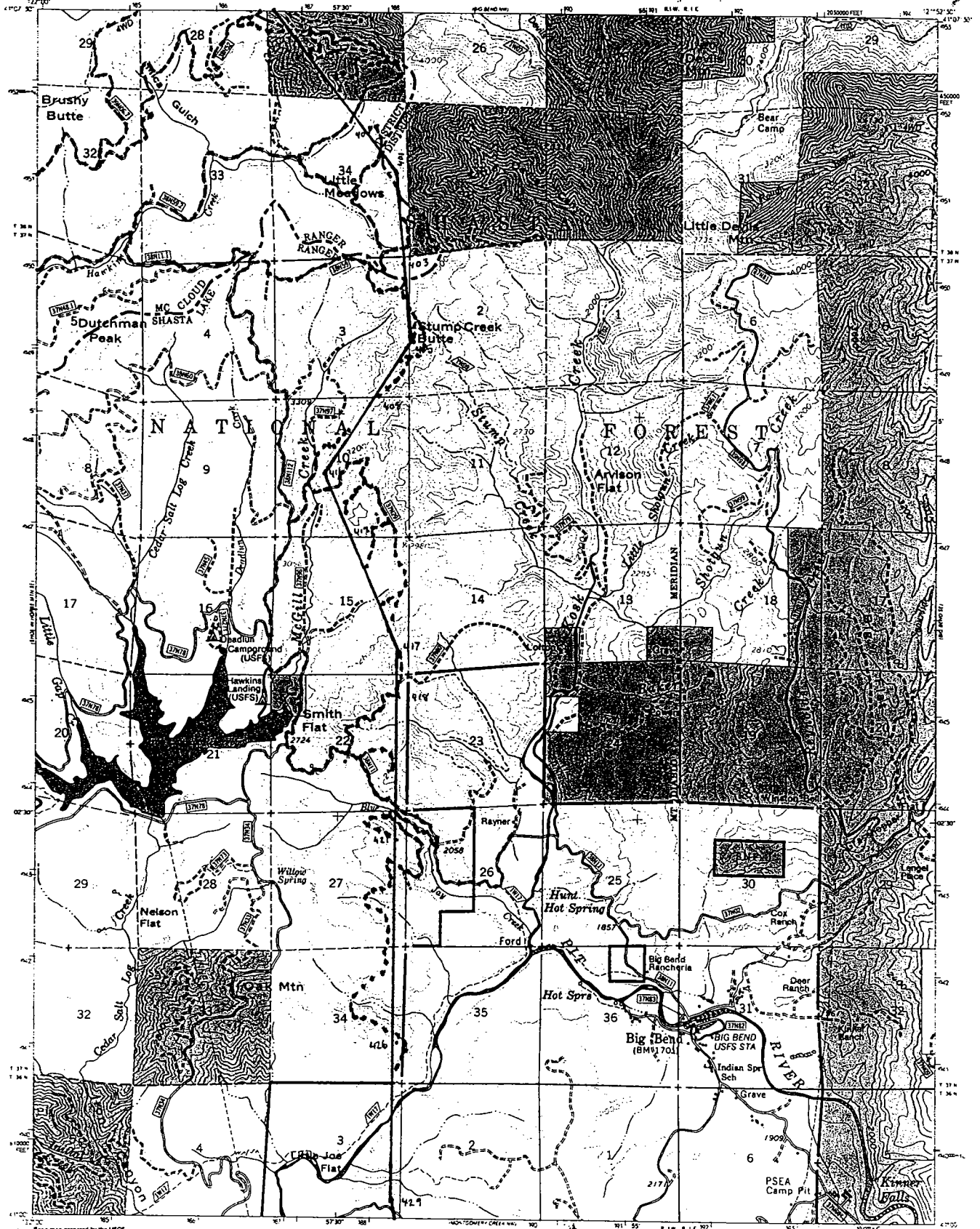
COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

BMAP 402PG0572

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MODIFIED FOR FOREST SERVICE USE

BIG BEND SW
7.5 MINUTE SERIES



Base map prepared by the USGS

Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zone I
1000-meter Universal Transverse Mercator grid, zone 10

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

INTERMEDIATE EDITION

Photorevision to USGS base map by Geosensronics Service Center from 1982 1:40,000 Forest Service photography and NRC correction guides furnished by the Pacific Southwest Region

LEGEND

- National Forest Boundary
- Non-Forest Service Land within Proclaimed Boundary as of 1983
- TOWNSHIP AND SECTION LINE CLASSIFICATION
- Surveyed, Location Reliable
- Surveyed, Location Approximate
- Unsurveyed, Protraction
- Primary Highway
- Secondary Highway
- Improved Light Duty
- Unimproved Dirt
- Trail
- Approximate Road
- Approximate Trail
- US Highway
- State Highway
- County Road
- Forest Highway
- Forest Road
- Forest Trail

BIG BEND SW
NA 10-W122 52 7.5
1963

680-3C

3203 PAGE 132

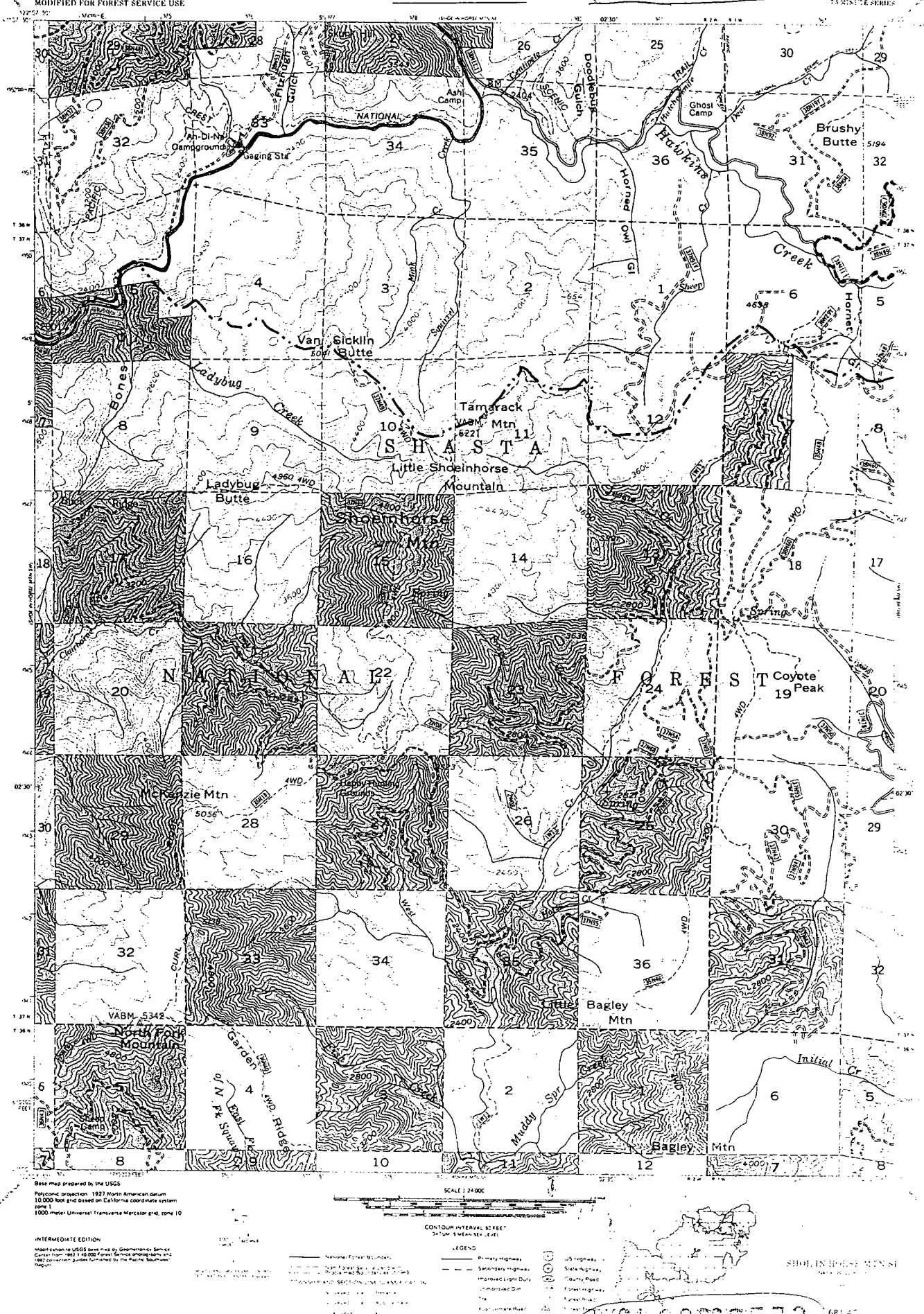
BK01402PG0572

35

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

MAP 19



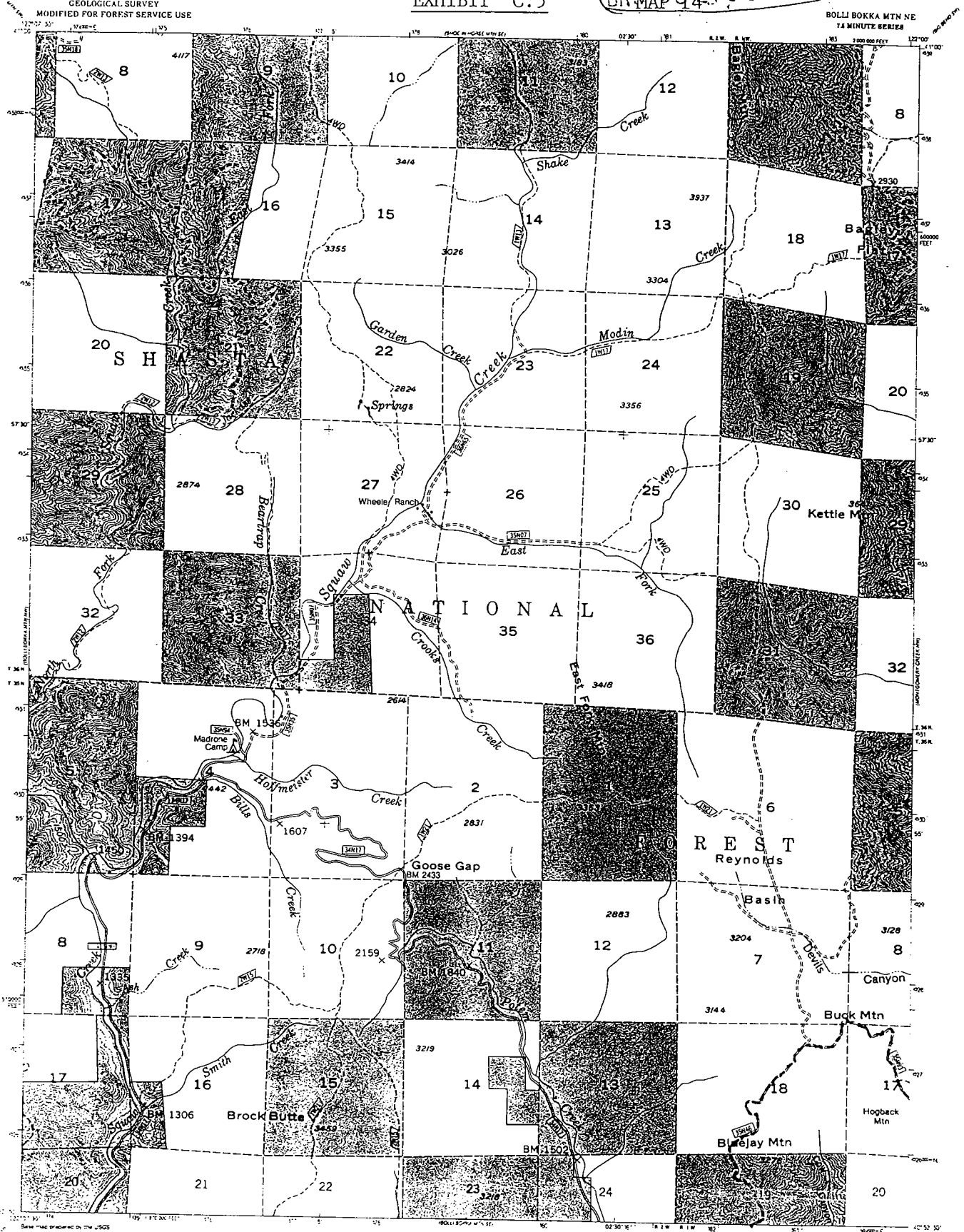
COTP: FINAL RIGHT-OF-WA

EXHIBIT C.5

MAP 94

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MODIFIED FOR FOREST SERVICE USE

BOLLI BOKKA MTN NE
7.5 MINUTE SERIES



Base map prepared by the USGS
Projection: 1927 North American datum
10,000 foot grid based on California coordinate system, zone I
1000 meter Universal Transverse Mercator grid, zone 10

SCALE 1:24 000

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL

LEGEND

- National Forest Boundary
- Nonforest Service Land within Proclaimed Boundary as of 1963
- Township and Section Line Classification
- Surveyed Location Approximate
- Surveyed Location Approximate
- Primary Highway
- Secondary Highway
- Improved Light Duty
- Unimproved Dirt
- Trail
- Approximate Road
- Approximate Trail
- US Highway
- State Highway
- County Road
- Forest Highway
- Forest Road
- Forest Trail

BOLLI BOKKA MTN NE
N4052.5-W12200/7.5
1963

664-1C

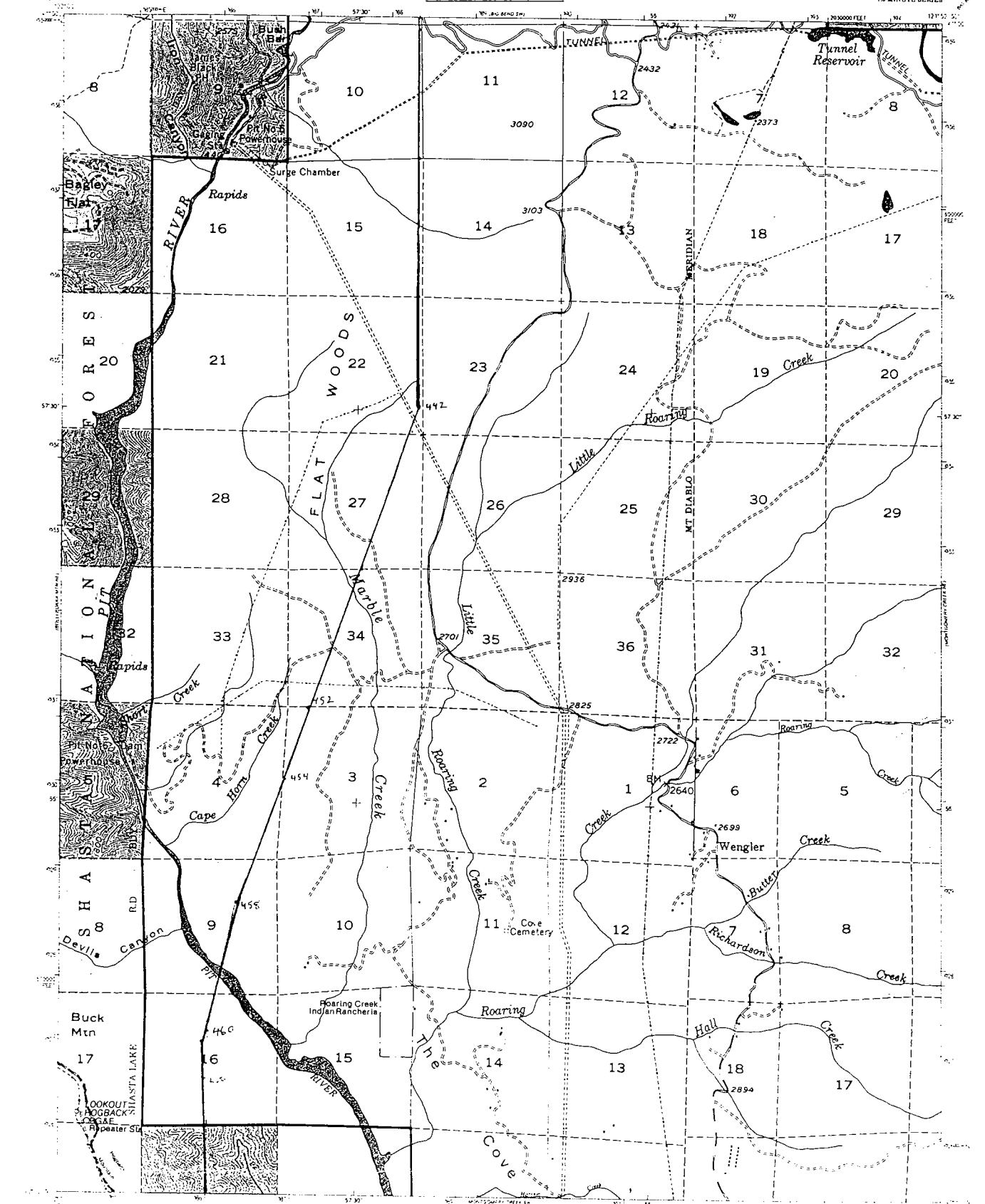
COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5

MAP 15

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MODIFIED FOR FOREST SERVICE USE

MONTGOMERY CREEK NW
7.5 MINUTE SERIES



Base map prepared by the USGS
Polyconic projection. 1927 North American datum
10,000 foot grid based on California coordinate system zone 1
1000-meter Universal Transverse Mercator grid: zone 10

INTERMEDIATE CONTOUR
SCALE 1:24,000
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

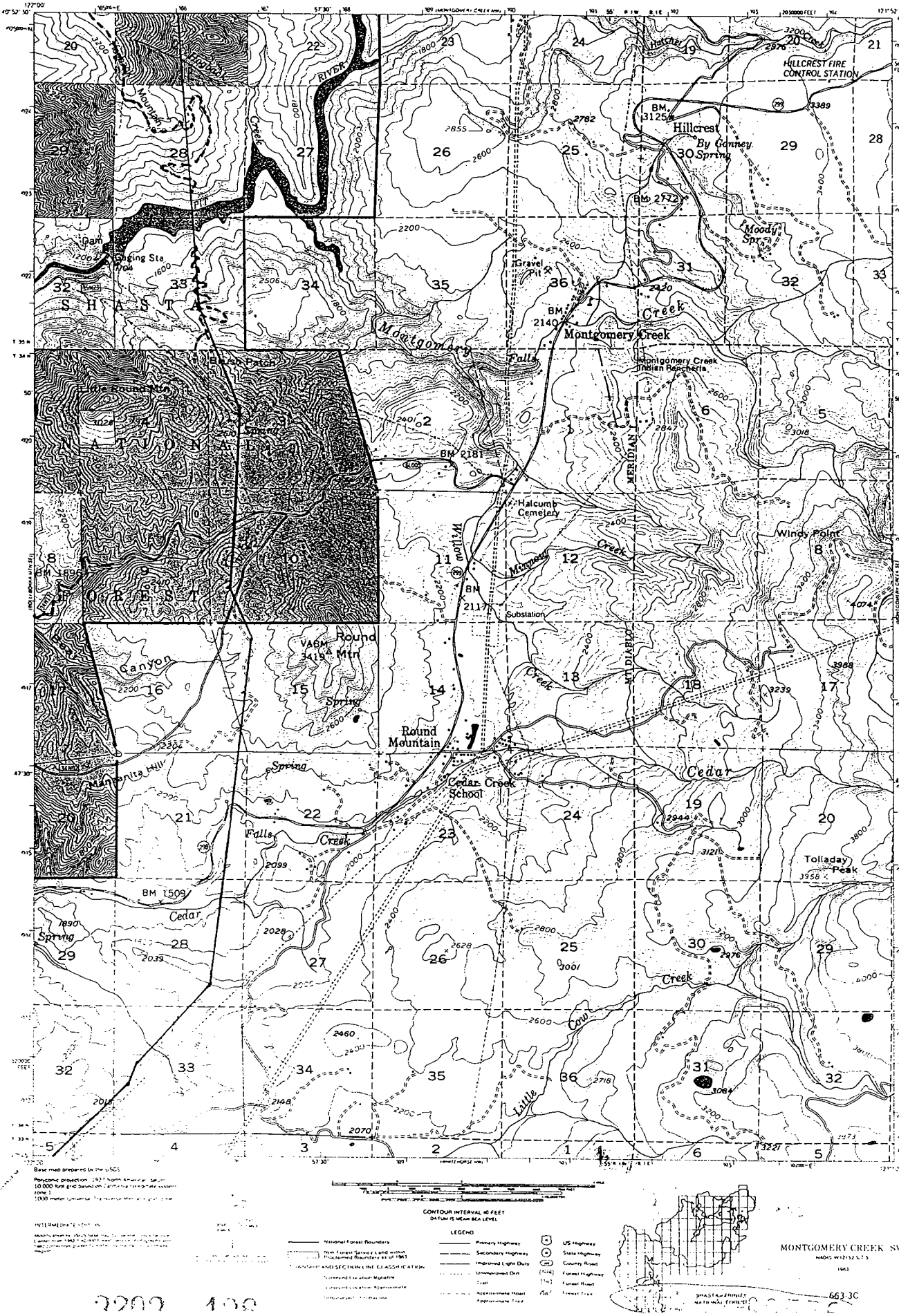
LEGEND

MONTGOMERY CREEK NW

663 20

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5 MAP 16



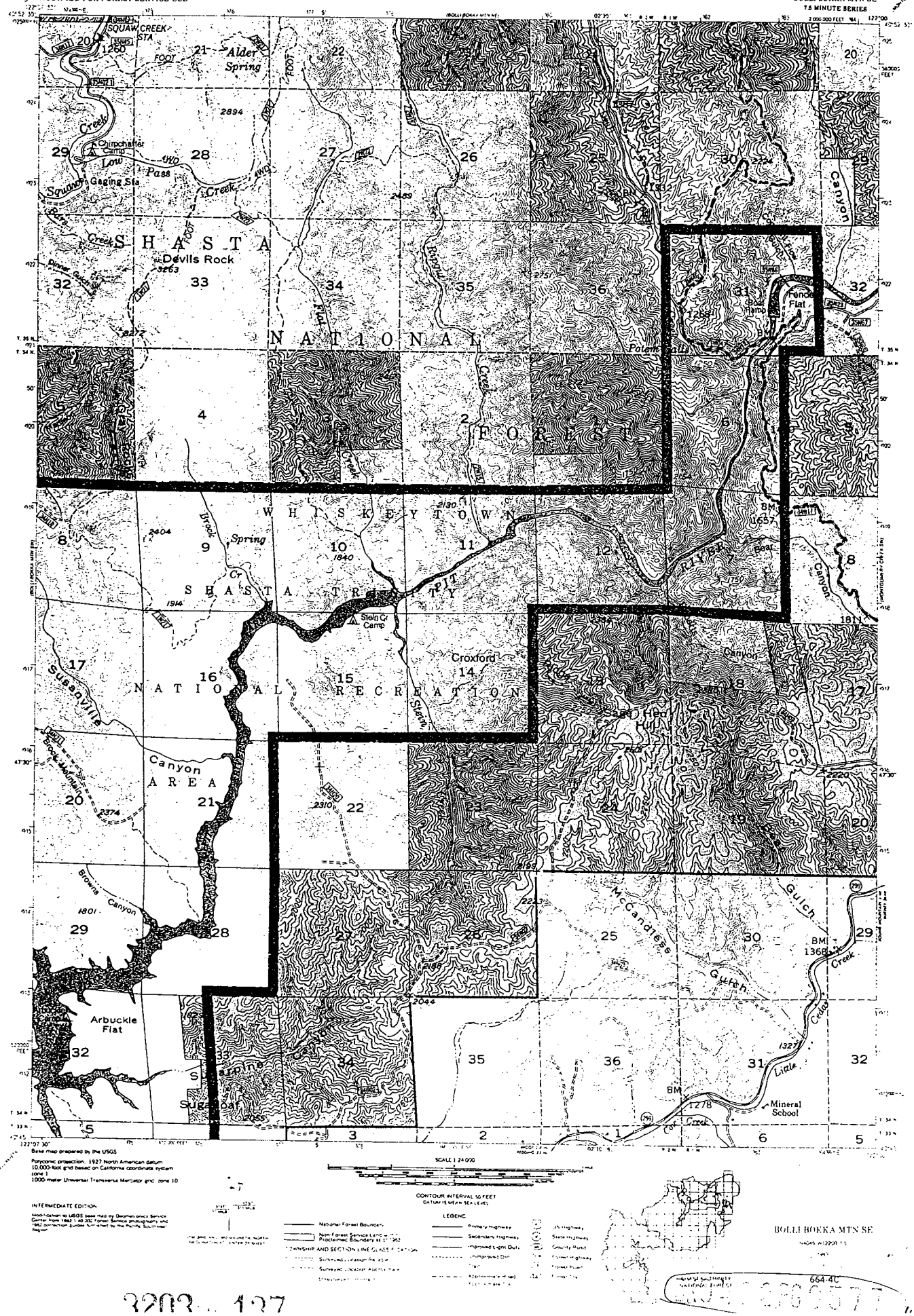
663.3C

COTP: FINAL RIGHT-OF-WAY

EXHIBIT C.5 MAP 17

BK0402PG0577

9401342



3202 127

664-4C

EXHIBIT D - MAP
COTP AND PACI NORTHERN CALIFORNIA FIRE RESPONSE PLAN
DISTRICT PROTECTION ZONES

EXHIBIT E

The following actions, when put into place, will significantly reduce the risk of wildfire-related powerline outages. The program does not guarantee that there will never be a wildfire-caused outage, but it does provide the most cost-efficient program for significantly reducing the risk of such an outage from fires in the existing vegetation types by providing breaks in fuel continuity, and by providing the necessary staffing and equipment for initial attack of fire starts in the area. It also does not address potentially serious fuels problems that may exist on private lands in and adjacent to the project area, which the Forest Service has no jurisdiction or authority to address.

SITE-SPECIFIC PROJECTS AND SCHEDULES

Site-specific vegetation and fuel treatments and fire response investments are in place and operational in the area between Border Mountain and Hambone Butte. Periodic maintenance will be required thereafter for the life of the powerline project. A new collection agreement will be necessary to continue funding of operation and maintenance.

1993 - ACTIVITY SCHEDULE

ITEM #	TREATMENT DESCRIPTION	SHASTA-TRINITY NF			MODOC NF			TOTALS	
		Units	$/Unit	$ Total	Units	$/Unit	$ Total	Units	$Total
1.a.	Underburning in the 1/4 mi. corridor				130 ac.	$152	$ 19,760	130 ac.	$19,760
1.b.	Follow-up treatment to previous year corridor underburn areas (mortality)				130 ac.	$ 21	2,730	130 ac.	2,730
2.a.i.	Fuelbreak construction brush/knobcone (tractor)	118 ac.	$200	$ 23,600				118 ac.	23,600
2.b.	Burn fuelbreak piles (from previous year's clearing/ construction)	182 ac.	$ 50	9,100	175 ac.	$ 50	8,750	357 ac.	17,850
2.c.	Plant/seed fuelbreaks	182 ac.	$ 30	5,460	175 ac.	$ 60	10,500	357 ac.	15,960
3.a.	Underburn high fuel hazard interior timber stands between corridors				48 ac.	$152	7,296	48 ac.	7,296
3.b.	Follow-up treatment to previous year interior stand underburns(mortality)				50 ac.	$ 21	1,050	50 ac.	1,050
4.	no work this item year 3								
5.	Engine operational costs				1		65,628		65,628
7.	Mechanical removal of high hazard fuel accumulations in interior stands				121 ac.	$180	21,780	121 ac.	21,780
8.a.	Maintenance of existing fuelbreaks in project area (piling)	125 ac.	$131	16,375				125 ac.	16,375
9-11	no work on these items yr 3								
YEAR 3 (1993) TOTALS				**$ 54,535**			**$137,494**		**$192,029**
OVERHEAD ASSESSMENT									28,805
TOTAL									$220,834

EXHIBIT E continued

1994 - ACTIVITY SCHEDULE

ITEM #	TREATMENT DESCRIPTION	SHASTA-TRINITY NF Units	$/Unit	$ Total	MODOC NF Units	$/Unit	$ Total	TOTALS Units	$Total
1.a.	Underburning in the 1/4 mi. corridor				130 ac.	$152*	$ 19,760	130 ac.	$19,760
1.b.	Follow-up treatment to previous year corridor underburn areas (mortality)				130 ac.	$ 21*	2,730	130 ac.	2,730
2.b.	Burn fuelbreak piles (from previous year's clearing/ construction)	118 ac.	$ 50	5,900				118 ac.	5,900
2.c.	Seed fuelbreaks **	118 ac.	$ 30	3,540				118 ac.	3,540
3.b.	Follow-up treatment to previous year interior stand underburns(mortality)				48 ac.	$ 21*	1,008	48 ac.	1,008
4.	No work on this item 1994				1		65,628		65,628
5.	Engine operational costs								
6-7	No work on these items 1994								
8.b.	Maintenance of existing fuelbreaks in project area (burning piles)	125 ac.	$ 14	1,750				125 ac.	1,750
9.	Spot burn interior stands				40 ac.	$182	7,280	40 ac.	7,280
10-11	No work on these items 1994								
1994 TOTALS				**$ 11,190**			**$96,406**		**$107,596**
5% INFLATION FACTOR									**5,380**
SUBTOTAL									**112,976**
OVERHEAD ASSESSMENT									**16,946**
TOTAL									**$129,922**

EXHIBIT E continued

1995 - 1997 ACTIVITY SCHEDULE

ITEM #	TREATMENT DESCRIPTION	SHASTA-TRINITY NF Units	$/Unit	$ Total	MODOC NF Units	$/Unit	$ Total	TOTALS Units	$Total
1.b.	Follow-up treatment to previous year corridor underburn areas (mortality)								
2-4	all work completed				130 ac.	$ 21*	2,730	130 ac.	2,730
5.	Engine operational costs				3yrs	65,628	196,884	3 yrs	196,884
6-7	all work completed								
8.c.	Seed existing fuelbreak**	125 ac.	$ 30	3,750				125 ac.	3,750
9.	Spot burn interior stands				40 ac.	$182	7,280	40 ac.	7,280
10.	Fuels manipulation interior brush stands				421 ac.	$176*	74,096	421 ac.	74,096
11	all work completed								
1995-1997 TOTALS				$ 3,750			$280,990		$284,740
5% INFLATION FACTOR									14,237
SUBTOTAL									298,977
OVERHEAD ASSESSMENT									44,847
TOTAL FOR 3 YEARS									$343,824

ANNUAL BILLING = 114,607.85

1998 AND BEYOND: Maintenance costs will be required. These costs will include the fixed costs of the fire engine module plus the variable costs of land treatments.

EXHIBIT F

TYPICAL FIRE RESPONSE PLAN

What follows is a typical response plan for an initial attack dispatch in California Department of Forestry and Fire Protection (CDF) and Forest Service fire responsibility areas along the COTP corridor.

Fire responsibility areas are divided into watershed response areas using criteria including threat to life and property, topography, fuels, fire weather, degree of property improvement, available equipment, and travel time (response time) of resources. The result is a flexible planning tool which allows localized input to determine the level of response. This typical response plan may also vary depending on resource availability and other incident (fire) status.

The amount of resources dispatched to any one incident is based on the weather, using three dispatch levels: Low, Medium, and High.

For a reported incident the typical initial attack dispatch would resemble the following:

Low Dispatch Level

* Chief officer
* A volunteer or paid fire company engine (depending on location)
* 1-2 type 3 or larger engines
* 1 air attack or copter

Medium Dispatch Level

* Chief officer
* Prevention officer
* A volunteer or paid fire company engine (depending on location)
* 2-4 type 3 or larger engines
* 1 dozer
* 1 air attack
* 1 air tanker
* 1 copter
* 1 fire crew (hand crew)

High Dispatch Level

* Chief officer
* Prevention officer
* A volunteer or paid fire company engine (depending on location)
* 4-6 type 3 or larger engines
* 1-2 dozers
* 1 air attack
* 1-2 air tankers
* 1 copter
* 1-2 fire crews (hand crews)

38989

TANC-WESTERN OPERATION AND MAINTENANCE AGREEMENT

Coordination with Western

TANC and Western cooperate directly on O&M activities primarily under the guidance of two agreements – the Project Operation and Maintenance Agreement (POMA) and the Agreement Between Transmission Agency of Northern California and Western Area Power Administration for Certain California-Oregon Transmission Project Operation and Maintenance Activities (also referred to as the TANC-Western Operation and Maintenance Agreement, or "TWOMA"). These two agreements set forth the roles and responsibilities of TANC and Western with respect to COTP (i.e., Project) O&M.

Maintenance responsibilities for both transmission tower and communication site access roads are not explicitly stated in both agreements. Ascertaining these responsibilities requires examination of the two agreements. Section 6 of the POMA applies to O&M work, and states that:

> *Western is hereby designated as the Operating Agent for the Project until otherwise determined by the Management Committee and shall perform the duties and responsibilities of the Operating Agent, in addition to Western's other responsibilities, set forth in this Agreement. As the Operating Agent, Western shall fulfill the duties specified in the POMA consistent with the law of the State of California* (Governing Law: POMA Section 25).

Section 6.2 of the POMA, titled "Responsibilities and General Authority," further clarifies the responsibilities of Western and TANC. Subsection 6.2.2 states that:

> *Western shall be responsible for the Operation and Maintenance Work for the CVP Upgrade Segment, for the Olinda Substation, for the Maxwell Compensation Station, for the Tracy Substation Expansion, and for certain Communications Facilities therewith.*

Subsection 6.2.2.4 further clarifies that:

> *Western's responsibility for Operation and Maintenance Work on Communication Facilities shall include all such facilities of the Project located at each of the following sites: 1) Olinda Substation; 2) Maxwell Compensation Station; 3) Tracy Substation expansion; 4) Elverta; and 5) Western's Sacramento Area Office Dispatch Center.*

Subsection 6.2.3 states that:

> *The Project Manager shall be responsible for the Operation and Maintenance Work for the Northern Segment, for the Tesla By-Pass Segment, and for Communications Facilities associated therewith.*

Subsection 6.2.3.3 further clarifies, regarding Communication Facilities, that:

> *The Project Manager's responsibility for Operation and Maintenance Work on Communications Facilities shall include all such facilities of the Project located at each of the following sites: 1) Timber Mountain; 2) Happy Camp; 3) Widow Mountain; 4) Big Valley; 5) Bear Springs; 6) Manzanita; 7) Hooker; 8) Round Mountain; 9) Corning; 10) Logan Creek; 11) Sites; 12) Rumsey; 13) Berryessa Peak; 14) Davis; 15) Elk Grove; 16) Sugarloaf; 17) Pixley; 18) Vollmer; 19) Highland Peak; 20) Skeggs Point; 21) Mount Oso; and 22) Pacheco Peak, and any other site that is not the operation and maintenance responsibility of Western.*

The POMA, therefore, allocates O&M responsibilities by facilities and sites, but does not clarify whether either "facility" or "site" includes or excludes access roads. The POMA definitions of Communications Facilities (§ 4.7) Northern Segment (§ 4.24), Project (§ 4.33), Tesla By-Pass Segment (§ 4.45) may refer to facilities, but do not refer to access roads. The terms "Facility" and "Site" are not defined in the POMA.

Section 6.5 of the POMA, titled "Generally Applicable Duties and Responsibilities" states that:

> *The Operating Agent, Western, and the Project Manager each for its areas of responsibility, shall cooperate to perform or cause the performance of …Procurement (§ 6.5.5) that references POMA Appendix B.*

Section B5 applies to Communication Facilities Maintenance Guidelines, and specifically mentions access roads under subsection B5.6, which states that:

> *All access roads will be kept passable and up to appropriate standards. All access road maintenance on public and private lands should be properly coordinated.*

Based on the POMA, generally applicable access road maintenance responsibilities for Western and the Project Manager (TANC) are as follows:

> <u>Western</u>:
>
> Access roads associated with: 1) Olinda Substation; 2) Maxwell Compensation Station; 3) Tracy Substation expansion; 4) Elverta; and 5) Western's Sacramento Area Office Dispatch Center.

TANC:

Access roads associated with: the Northern Segment, the Tesla By-Pass Segment, and for Communications Facilities associated therewith, including: 1) Timber Mountain; 2) Happy Camp; 3) Widow Mountain; 4) Big Valley; 5) Bear Springs; 6) Manzanita; 7) Hooker; 8) Round Mountain; 9) Corning; 10) Logan Creek; 11) Sites; 12) Rumsey; 13) Berryessa Peak; 14) Davis; 15) Elk Grove; 16) Sugarloaf; 17) Pixley; 18) Vollmer; 19) Highland Peak; 20) Skeggs Point; 21) Mount Oso; and 22) Pacheco Peak, and any other site that is not the operation and maintenance responsibility of Western.

Section 6 of the TWOMA, which deals with Contract work (by Western for TANC) further explains Western's responsibilities as the Operating Agent, and states that, for the Northern Segment, the Tesla By-Pass Segment, and specified Communication Facilities, Western will have the right to enter Project properties and shall perform or cause the performance of the activities set forth in Section 6 and will maintain Project facilities in good repair and with as high availability as possible, all in accordance with the work standards and contracting procedures set forth in the POMA.

Section 6.1 of the POMA, which refers only to transmission lines, states generally that maintenance activities for the Northern Segment and Tesla By-Pass Segment will include both scheduled and unscheduled activities such as (TANC 1993a):

- Periodic aerial line patrol each calendar quarter (§ 6.1.1)
- Annual ground line patrol (§ 6.1.2)
- Removal and control of trees, brush, and weeds (§ 6.1.4)
- Power line patrol for road maintenance and inspection of drainage culverts for plug-ups and overflows (§ 6.1.5)
- Accompany various individuals to job sites ((§ 6.1.16).

Section 6.2 of the TWOMA states that Communication Facilities to be maintained by Western shall include: 1) Timber Mountain; 2) Happy Camp; 3) Widow Mountain; 4) Big Valley; 5) Bear Springs; 6) Manzanita; 7) Hooker; 8) Round Mountain; 9) Corning; 10) Logan Creek; 11) Sites; 12) Rumsey; 13) Berryessa Peak; 14) Davis; 15) Elk Grove; 16) Sugarloaf; 17) Pixley; 18) Vollmer; 19) Highland Peak; 20) Skeggs Point; 21) Mount Oso; and 22) Pacheco Peak or its equivalent.

Subsection 6.2.2 of the TWOMA further states that maintenance activities for these communications sites will include scheduled and unscheduled:

- *Semi-annual site visits to inspect, adjust, clean, and repair station service-related equipment, including the ;building, batteries and charger, heaters and air conditioners, antenna towers and waveguides, auxiliary power supplies, including emergency generators, if any, and such other maintenance as required to provide for an operational system (§ 6.2.2.1)*

- *Test and adjust the signal strength, frequency, and voltage levels, as required (§ 6.2.2.2); and*

- *Troubleshoot and repair equipment associated with unscheduled maintenance (§ 6.2.2.3).*

The TWOMA, therefore, is consistent with the POMA in allocating access road maintenance responsibilities.

Other relevant provisions of the TWOMA state that Western shall:

- Comply with all state and federal laws, regulations, permits, and licenses respecting environmental protection

- Provide monthly and other periodic and special reports to TANC concerning the progress and cost of Contract Work performed

- Assist TANC in preparing any procedures, guidelines, practices, lists, reports, schedules, and budgets which the Management Committee directs be prepared with respect to any aspect of the Contract Work undertaken in accordance with this (TWOMA) Agreement (TANC 1993a).

Western and TANC regularly coordinate access road maintenance activities, and work cooperatively to see that needed work is completed. The process whereby access road maintenance needs are identified is discussed in further detail below.

CALIFORNIA-OREGON TRANSMISSION PROJECT: UPDATED EASEMENT OPERATIONS AND MAINTENANCE PLAN

I. Introduction

The Updated Operations and Maintenance Plan (hereafter Plan) was prepared jointly by the Transmission Agency of Northern California (TANC) and the Forest Service to update and replace the Operation and Maintenance Plan referenced in Condition No. 33 of the Grant of Right-of-Way (the Easement) dated July 6, 1994, for operation of a 500-kV powerline, known as the California-Oregon Transmission Project (COTP), crossing approximately 1,433 acres (or 58 miles) of National Forest System lands in the Modoc, Lassen and Shasta-Trinity National Forests as follows:

Modoc National Forest	453 acres	Doublehead Ranger District
	147 acres	Big Valley Ranger District
Lassen National Forest	12 acres	Hat Creek Ranger District
Shasta-Trinity National Forest	625 acres	McCloud Ranger District
	196 acres	Shasta Lake Ranger District

This Plan is an integral part of the conditions of the Easement, and sets forth the formal agreement of WESTERN/TANC and the Forest Service on specific operation and maintenance matters. This Plan will apply to any and all Western/TANC contractors and their employees on the COTP. Western/TANC is responsible for insuring that all contractors and their employees are aware of the contents of the Easement and this Plan.

No new construction or reconstruction of facilities associated with the COTP is authorized by this Plan. Examples include but are not limited to reconstruction of roads not identified or approved in Exhibits C.1 and C.2 of the Easement, movement of roads or towers from existing locations, or addition of new roads or towers.

Nothing in this Plan shall be construed to relieve Western/TANC of the responsibility to correct or otherwise fully compensate for the correction of any damage caused by operation of the line.

II. Coordination and Communication

Principal Representatives

It is important that there is clear, efficient and timely communication and coordination between the Forest Service and Western/TANC for operation and monitoring of this project on National Forest System lands. To that end, the Forest Service and Western/TANC will each designate a principal representative assigned to this project. For hazard removal operations, each Forest shall also designate one primary and one alternate contact. Western/TANC may also designate its operating agent as principal

contractor assigned to maintenance and operation of the line with two primary contacts assigned to work with the Forest Service on annual maintenance work.

Noncompliance

If the Forest Service believes that unacceptable resource damage is occurring or that the terms of either the Easement or this Plan have been, or are being, violated, and prior to following the procedures set forth in the regulations, it will immediately notify Western's/TANC' s principal representative and seek informal discussions. If informal discussions do not resolve the matter to the satisfaction of the Forest Service, it will follow the regulatory procedures for easement suspension, termination or revocation.

Plan Amendments and Changes

Modification and/or changes in this plan may be initiated at the request of Western/TANC or the Forest Service. Changes will be negotiated between Western/TANC and the Forest Service and will require joint approval by the Lead Forest Supervisor and Western/TANC Project Manager.

Tracking and Identification

The primary tracking unit for all activities and sites will be the operation and maintenance tower numbers (hereafter tower numbers) and/or the Township, Range and Section numbers. This will be supplemented with 1:24,000 scale topographic maps and/or photos with tower numbers and the road system marked on them.

III. Financing

Road Maintenance Deposits

Western/TANC will provide funds for surface replacement and maintenance pursuant to this Agreement for certain roads listed in Exhibit C.1 and C.2 of the Easement. Standard rates for existing roads will be applied by the Forest Service. Surface replacement and road maintenance dollars or equivalent amounts will be deposited by Western/TANC in a Forest Service account under a collection agreement pursuant to 16 U.S.C. § 572. These deposits are for general surface replacement based on the amount and type of use that will occur. Other project road maintenance will be financed by Western/TANC and accomplished by Western/TANC contractors.

If requested by Western/TANC and approved by the Forest Service, Western/TANC may also perform minor road maintenance work on Forest Service roads where such work is not a requirement of a Forest Service Contract or addressed in a collection agreement. The deposits that Western/TANC makes to the Forest Service in the collection agreement will be reduced by the amount Western/TANC expends in such approved road maintenance work. Western/TANC will provide records supporting its costs to obtain Forest Service approval.

Other Western/TANC Funding to Forest Service

The Forest Service has indicated to Western/TANC that its current staffing and budget levels are inadequate to provide services beyond normal administration of the Easement. Normal administration includes participation in the annual meeting, annual field checking of operations occurring on the line, annual fire prevention monitoring of activities occurring on the line and written and verbal correspondence regarding the Easement and COTP. Existing budgets do not provide for required field surveys for the preparation and administration of timber contracts for hazard tree removal, fire prevention inspection of crews and equipment operating within the right-of-way, or fuels reduction inspection and administration of slash operation within the timeframe requested by Western/TANC. Reconstruction proposals requiring environmental evaluation under the National Environmental Policy Act, Endangered Species Act, or other act or regulation would also require additional funding to complete these reviews before project approval. Western/TANC has requested, and in the future will continue to request, these services from the Forest Service with regard to the operation and maintenance of the COTP within the Easement. Western/TANC shall continue to fund the performance by the Forest Service of such necessary support services pursuant to one or more collection agreements under the authority of 16 U.S.C. § 572.

Forest Service representatives and support assistance charging against such collection agreement will be under the direct supervision of the Forest Service. The Forest Service's agreement to perform work as per a collection agreement does not alter or modify Western's/TANC's obligation and liability for the work.

IV. Operation and Maintenance Activities

Safe operation of the powerline requires 36.3 feet of clearance (FEIS pg. 1.1.2-2) between the phases of the powerline and ground or 25 feet of clearance between the powerline phases and vegetation, facilities, or vehicles below the line. Western/TANC will perform annual field reconnaissance of the right-of-way to identify the annual treatment areas needed to maintain this clearance distance and reduce fuel build-up that could contribute to a line outage or cause a fire. Those areas that need treatment will be identified by Western/TANC and scheduled for treatment as detailed in this plan.

In addition, when instances arise where a prior survey has not identified a hazard, or conditions arise such as extreme heat or equipment failure, trees or brush may need removal on an emergency basis. Emergency trees are those trees or portions of trees which have grown closer than 25 feet to any of the three phases, or are precariously leaning or hanging such that it is reasonable to conclude that they will fall into the line within the season. Treatment of these emergency trees will follow the direction explained below under "Emergency Trees."

Vegetation Removal

Emergency Trees

During annual reconnaissance, the following procedure will be followed for emergency trees:

Western/TANC will notify the identified Forest Service principal or alternate contact, for the area to be surveyed, at least one week in advance of planned reconnaissance. Notification can be by phone or writing and each Forest (i.e., Modoc, Lassen, and Shasta-Trinity) shall have a minimum of two approved contacts for this purpose. Within ten (10) days following cutting of any emergency trees, as defined above, Western/TANC shall notify the affected National Forest of the location, number and size of the trees cut and the Forest Service shall make a determination if a timber sale contract or fuel treatment plan is needed. This determination will be based on both resource and economic factors including but not limited to location, amount, size, access, and existing fuel load. For incidental amounts that would not reasonably justify the administration and conduct of a planned timber harvest, the Forest may determine that no additional treatment is required.

If a timber sale contract or fuel treatment plan is needed, the Forest Service and Western/TANC will negotiate the timing of the required activity. Treatment may be postponed and incorporated with future treatments, removals, or planned operation and maintenance visits if they are reasonably anticipated and no additional hazard or loss of value is expected. Conversely, treatment may be required within a short timeframe if other resource impacts are a concern. Examples include but are not limited to insect infestation areas or high fire hazard and fuel load.

Annual Hazard Reduction Plan

Following annual reconnaissance of the right-of-way, Western/TANC will submit a hazard reduction treatment proposal to the Forest Service principal representative for planned treatment areas along portions of the right-of-way. If feasible, this proposal may be staged to identify multiple entries over several years (3 to 5). This proposal will be as follows:

Prior to April 1 each year, Western/TANC will submit a proposal to the Forest Service which includes the following items:

- Location by Township, Range, and Section
- Location by tower numbers
- Map of proposed clearing areas with access roads and tower numbers identified
- Proposed clearing specifications (i.e., all trees over 15 feet tall)

Western/TANC shall identify the trees to be removed either by painting individual trees, delineating the area width and length, or by height description and the outer boundaries for clearing where large numbers of trees are identified.

Prior to June 1 of each year, the Forest Service will conduct a site visit and mark any merchantable timber for harvest and sale. Depending on the area identified and the estimate of trees removed, it may be necessary for a representative from Western/TANC to attend the site visit. The Forest Service will also review any unmerchantable trees and brush to be removed to estimate the total fuel load created by the clearing work. Prior to June 15 of each year, the Forest Service will prepare a Timber Sale Contract and/or a Fuel Treatment Plan for the clearing work. Western/TANC will purchase any merchantable trees not previously purchased, at the current rate based on standard timber appraisal techniques. The specifications for harvest and treatment will vary depending on existing site conditions. The approved package (proposal, Timber Sale Contract, Fuel Treatment Plan, correspondence, etc.) will be compiled into the Annual Hazard Treatment Plan. If Western/TANC prepares a subsequent bid package or contract for work on National Forest lands, Western/TANC will supply a copy of the bid and/or contract to the Forest Service principal representative prior to advertisement. Any bid package or contract for work on National Forest lands will comply with the terms and conditions of the Timber Sale Contract and/or Fuel Treatment Plan, the Easement and this Plan.

In order to accommodate Western's/TANC's budget process, the Forest Service will strive to meet the timelines in this section.

Limited Operating Periods

Limited operating periods may be imposed for reconnaissance and hazard reduction activities when weather, soil conditions, or other environmental constraints (e.g., nesting seasons) dictate. The location of areas needing special measures for protection of plants or animals as threatened endangered, or sensitive are listed in Appendix B.

Timber Treatment

Merchantable Material

The non-emergency trees to be cleared will be identified by Western/TANC as noted above, and reviewed by the Forest Service. All timber will be marked and cruised by the Forest Service or Western/TANC, as approved by the Forest Service, before sale to Western/TANC. Commercial timber to be cut on National Forest System lands will be sold to Western/TANC according to standard timber appraisal techniques. Merchantable timber will meet the following minimum utilization specifications:

- 10-foot log length with minimum eight inch diameter inside bark at the small end.
- 10-inch diameter at 4 1/2 feet from ground and 20 Board Feet/log (BF = 1' x 1' x 1")

- 25% sound wood (free from rot, or other damage, i.e., fire scar, lightning scars)

Brush and small, unmerchantable trees that are not of sufficient size to interfere with the powerline operation will not be cleared.

Where substantial understory exists, felling shall be directional and/or staged in order to minimize damage to remaining trees.

When trees are cut, stump heights shall not exceed eight (8) inches above ground line when measured on the uphill side of the tree.

All merchantable trees will be cut to merchantable lengths as designated in the Timber Sale Contract.

No tractors will be allowed on slopes exceeding 35 percent except in short segments as negotiated and approved by the Forest Service.

All landings for the Timber Sale Contract operations will be identified by Western/TANC and approved by the Forest Service in the Timber Sale Contract unless otherwise agreed in advance.

Temporary stream crossings and designated skid trails shall be required within streamside protection zones along the right-of-way. These will be identified and approved by the Forest Service prior to harvesting, and will be shown in the Timber Sale Contract.

Unmerchantable Material

Unmerchantable sawlogs and fuelwood material will be decked at landings or along designated roads for public use. Fuelwood material is generally all species at least 8 feet long and 6 inches diameter at the small end. Where fuelwood recovery and utilization is jointly determined to be not practical, fuelwood will be disposed of as described under the heading “Fuels Treatment.” Slash, rocks, and soil shall not be placed in lakes, meadows, streams, or streamside protection zones.

Fuels Treatment

Debris Removal/Slash Disposal

Slash and unmerchantable trees removed as emergency trees or during annual hazard reduction shall be treated by one or a combination of the following methods, as designated on the annual hazard reduction plan:

a. chipping
b. decking
c. lopping and scattering
d. piling
e. off-site piling for burning

Chipping and scattering will be the disposal method most apt to be used for moderate to heavy amounts of slash. Lopping and scattering will be approved only where fuels are very sparse. Where chipping in place is not feasible due to steep rocky slopes, debris may be yarded to an accessible site for chipping.

The Forest Service will assign a fuels management specialist to review the annual hazard reduction treatment proposal and approve the treatment method to ensure that results meet fuel loading standards and management objectives defined in the COTP FEIS/EIR. Disposal shall conform to the requirements identified in Appendix C, Fuel Treatment Requirements.

V. Fire Plan

Fire Protection and Suppression

This Fire Plan sets forth responsibilities for the prevention, pre-suppression, and suppression activities occurring within the Easement, or on any other National Forest System lands that may be authorized to be used in connection with the COTP activities within the Easement (collectively, the "Project Area"). The provisions of this Fire Plan are to be implemented in addition to, and are not intended to supersede, the provisions of Exhibits E and F of the Easement, which are directed specifically at controlling the fuel loads between the COTP and the Pacific AC Intertie lines. In the event that a work stoppage is required due to extreme fire conditions as defined below, or that emergency coordination is required, the Forest Service and California Department of Forestry and Fire Protection will not bear any increased costs to Western/TANC associated with these time delays.

Responsibility

Western/TANC:

- Will appoint a Fire Guard to perform the duties specified in Appendix E of this Plan, who will be identified in writing to the Forest Service offices listed in the Fire Call Directory (Appendix F to this Plan).
- Will observe the restrictions and requirements set forth in Appendix E of this Plan.
- Is responsible for all suppression costs for COTP-caused fires.
- Will initiate action to suppress all COTP caused fires until the Forest Service, state, county or other fire suppression force arrives and assumes control of managing the incident.
- Will insure that prevention, detection, pre-suppression, and suppression activities are in accord with this Fire Plan and state, county, and federal laws, ordinances, rules and regulations pertaining to fire.
- Will designate in writing those in authority on the job to be responsible for right-of-

way activities. Copies will be distributed to all offices listed in the Fire Call Directory.

- Will curtail or shut down any operation or maintenance activity that poses an unacceptable fire hazard and risk as determined by the fire protection agency.
- Will notify nearest appropriate Forest Service interagency dispatch center of electric faults on the COTP transmission line as soon as practicable after the fault during the fire precautionary period (May 1 through November 15). Notification will include time of fault and approximate location as available.
- Will take the following action should a fire occur within the Project Area:
- Will immediately notify the nearest appropriate agency (see Fire Call Directory, Appendix F) of fire location, action taken, and status of the fire. This will include fires totally suppressed by Western/TANC, its operating agent, or contractors.
- Will immediately alert the available project crews and send available manpower with tools and equipment to control the fire.

Forest Service:

- Will inspect the Project Area for compliance with fire prevention requirements and will notify Western/TANC in the event that deficiencies occur.
- Will notify Western/TANC as soon as practicable of any fires within proximity of the right-of-way.
- Will issue permits for cutting, welding, and blasting at the appropriate offices.

Western/TANC and the Forest Service will cooperatively update the Fire Contact Directory before April 1 every year, including Fire Communication Centers, key contacts, titles, and daytime and after hour phone numbers. The Forest Service will produce and distribute the updated directory to all locations it lists, to the Forest Service Fuels Management Officer, and Western/TANC's Principal Representative.

Fire precaution measures will be implemented by Western/TANC based on Fire Danger, as calculated by the Forest Service through the National Fire Danger Rating Process, see Appendix G.

When working in the Project Area during fire season, Western/TANC shall contact the Modoc Interagency Command Center or Shasta Trinity Interagency Fire Communications Center each day between 4:00 and 6:00 p.m. PDT to obtain the Fire Danger Rating to be followed the next day within the local area. Western/TANC shall, no later than 9:00 a.m. the following day, advise its contractor(s) of any change in the Fire Precaution Measures, see Appendix G.

VI. Environmental Requirements

Air/Soil/Water Quality

Erosion control is a primary concern in protecting and maintaining water quality. The Forest Service is designated as the Water Quality Management Agency responsible for water quality on National Forest System lands in California. Best management practices provide the basic framework for protecting water quality, and are applied to the various sections of this plan, as appropriate.

Operation activities shall be scheduled and conducted to minimize erosion and sedimentation, and compaction. Activities will be minimized during winter and other wet periods to prevent damage (excessive rutting, unacceptable erosion of fines from road surface, excessive soil compaction). The normal operating season is April 15 to November 15 except for reconnaissance activities. Permission to operate outside this period, except for emergency repairs, may be approved subject to weather conditions.

Standard techniques for controlling water runoff on access roads will be used. Water bars or cross ditches, diversion ditches, berms, and energy dissipaters shall be maintained to meet the standards of road maintenance set by the Forest Service.

Where soil has been severely disturbed and the establishment of vegetation is needed to minimize erosion, Western/TANC shall take appropriate measures as approved by the Forest Service to establish an adequate cover of grass or other vegetation. Soil preparation, seeding, mulching, and fertilizing shall be repeated as necessary to secure soil stabilization and revegetation acceptable to the Forest Service.

Additional Mitigations from COTP FEISIEIR

All requirements of those entities having jurisdiction over air quality matters will be adhered to and any permits for construction activities will be obtained. Burning will not be allowed unless permitted by appropriate authorities.

Existing roads damaged as a direct result of new or re-construction and maintenance activities related to the transmission line will be repaired to a condition equal to or better than their condition prior to construction or maintenance activities which caused the damage.

Disturbed soil around tower bases will be rehabilitated and the area reseeded when the topsoil has been replaced.

Run-off control structures, diversion ditches, and erosion control structures will be cleaned, maintained, repaired, and replaced whenever necessary.

Road access will be negotiated with landowners to allow use of roads and rights-of-way for mining and mineral extraction as long as those activities do not interfere with Project operation or create health and safety hazards such as induced currents on metallic structures or equipment.

A buffer of undisturbed vegetation shall be maintained along all lakes and streams. At a minimum, the buffer shall extend to the first point of slope break or 100 feet, whichever is greater. Additional needs for buffers will be coordinated with the appropriate land management and regulatory agencies.

All stream crossings will be constructed such that they permit fish to pass and reduce the potential for stream flows to result in increased scour, washout, or disruption of water supplies.

New stream crossings will be built at approximate right angles to streams, wherever possible.

Wildlife/Botany

Location of areas needing special measures for protection of plants or animals as threatened or endangered under the Endangered Species Act of 1973 are shown in Appendix B. The R-5 Sensitive Plant and Animal Species List and listed survey and manage species under the Northwest Forest Plan are also shown in Appendix B. Operation activities may be limited or additional surveys may be required in these areas. If Western/TANC believes that it must take an action within a limited operating period or habitat area, as noted below, it must submit a written request to the Forest Service stating the reasons for its request, stating that granting the request will have no impact on the species of concern, stating the basis for that conclusion, providing the necessary supporting information, and seeking a modification of the limited operating periods. The request will not be approved unless the Forest Service determines that there is no impact, or unless the concurrence of the Fish & Wildlife Service is obtained through a biological opinion.

Species	Limited Operating Period	Tower Numbers (Inclusive)
Bald eagle	January 1 - August 1	460 - 472
Goshawk	February 15 - August 15	202 - 226
Osprey	April 1 - August 1	460 - 472
Spotted owl	February 1 - July 10	310-334, 391 - 404
Swainson's hawk	May 1 - August 15	96-97
Pronghorn kidding areas	April 15 - June 30	146 - N boundary
Winter deer range	December 15 - April 30	146 - N boundary
Sagegrouse	February 15-June 15	101-103

If protection measures prove inadequate, if other areas are discovered, or if new species are listed on the Endangered Species List or under the Northwest Forest Plan, as amended, the Forest Service may unilaterally modify this Operations and Maintenance Plan to provide additional protection regardless of when such facts become known. Discovery of such areas by either party shall be promptly reported to the other party.

Additional Mitigations from COTP FEISIEIR

Maintain habitat diversity on rights-of-way through forested areas.

In areas where right-of-way clearing would remove snags of important value, create new snags to offset losses.

Cultural Resources

Wheeled or track-laying equipment shall not be operated within the boundaries of identified archaeological sites except on roads, landings, tractor roads or skid trails approved under this Plan or approved Timber Sale or Fuel Treatment Contracts. The Forest Service will review the annual Hazard Reduction Plan proposal for known cultural sites and notify Western/TANC or its operating agent of those areas. If necessary, sites will be flagged for avoidance by the Forest Service prior to approval for hazard reduction work. Special clearing treatments, such as hand removal of slash from sensitive sites, may be required. Unless agreed otherwise, trees will not be felled into such areas. Western/TANC may be required to backblade skid trails and other ground disturbed by Western's/TANC's operations within such areas in lieu of cross ditching.

Additional Mitigations from COTP FEISIEIR

Impacts to cultural resources will be mitigated by avoidance whenever possible. If resources cannot be avoided, the steps listed in the Memorandum of Agreement (MOA) between the Lead Agencies, the State Historic Preservation Officers, and the Advisory Council on Historic Preservation will be taken. The MOA is contained in Appendix H to Section 1.5.6 of COTP FEISIEIR.

Hazardous Materials

Definitions

Oil: Includes oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, and oil refuse.

Hazardous Substances: Any element, compound, mixture, solution, or substance which, when released into the environment, may present substantial danger to the public health and welfare or the environment. (This excludes petroleum products, and natural or synthetic gases useable for fuel.) Any substance found and not readily identifiable should be treated as hazardous until otherwise identified.

Hazardous Spill: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment of an oil or hazardous substance.

Discovery and Notification

Discovery of, or the accidental discharge of a significant amount of, oil and/or hazardous materials within the Project Area shall be reported immediately to the nearest Interagency Command Center (see Fire Call Directory, Appendix F). For the purposes of the preceding requirement, a "significant amount" shall be such an amount, which, under the circumstances of the discharge, triggers another reporting requirement

under any applicable federal, state or local law or regulation. Western/TANC shall clean up or otherwise remediate any release, threat of release, or discharge of hazardous materials that occurs within the Project Area in connection with Western's/TANC's activities, whether or not those activities are authorized under the Easement. Western/TANC shall perform cleanup or remediation immediately upon discovery of the release, threat of release, or discharge of hazardous materials. Western/TANC shall perform the cleanup or remediation to the satisfaction of the authorized officer and at no expense to the United States. Upon revocation or termination of the Easement, Western/TANC shall deliver the Project Area to the Forest Service free and clear of contamination.

Storage of Hazardous Materials

Western/TANC shall not store any hazardous materials of any type or in any quantity within the Project Area without obtaining the prior written approval of the authorized officer, and this approval shall not be unreasonably withheld. Western/TANC shall also request approval by the state and/or county when required. Any request for storage of hazardous materials will require an Emergency Response Plan, Health and Safety Plan and Spill Plan which includes specific terms and conditions including, but not limited to, the specific type of materials to be stored, the volume and type of storage. Each plan will be specific to the request. Such terms and conditions proposed by Western/TANC are subject to approval by the authorized officer. If any hazardous materials are used or stored within the Project Area, the holder shall deliver and maintain a surety bond as required by the authorized officer.

Spill Prevention Control and Countermeasure Plan

If the total oil and oil product storage within the Project Area exceeds 1,320 gallons, or if any single container exceeds a capacity of 660 gallons, Western/TANC shall prepare a Spill Prevention Control and Countermeasure (SPCC) Plan. Such plan shall meet applicable Environmental Protection Agency (EPA) requirements (40 CFR 112) including certification by a registered professional engineer, and the Above Ground Petroleum Storage Act of 1989 (SB 1050) as amended.

Certification upon Revocation or Termination

If Western/TANC uses or stores hazardous materials within the Project Area, upon revocation or termination of the Easement Western/TANC shall provide the Forest Service with a report certified by a professional or professionals trained in environmental site assessments and acceptable to the Forest Service. The report shall determine if the Project Area has been contaminated by the presence of hazardous materials and if there has been a release or discharge of hazardous materials upon the Project Area, into surface water at or near the Project Area, or into groundwater below the Project Area during the term of the Easement. If a release or discharge has occurred, the professional or professionals shall document and certify that the release or discharge has been fully remediated and that the operations of the COTP are in compliance with all federal, state and local laws applicable within the Project Area.

Health and Safety

Western/TANC shall take all measures necessary to protect the environment, natural resources, and the health and safety of all persons affected by the use and occupancy of the Easement and shall promptly abate as completely as possible and in compliance with all applicable laws and regulations any physical, or mechanical procedure, activity, event or condition existing or occurring during or after the term of the authorization that causes or threatens to cause (a) a hazard to the safety of workers or to public health or safety or (b) harm or damage to the environment (including but not limited to areas of vegetation or timber, fish or other wildlife populations, or their habitats, or any natural resource). Western/TANC shall immediately notify the authorized officer of all serious accidents that occur in connection with such activities. It is solely the responsibility of Western/TANC to protect the health and safety of all persons affected by activities of the COTP within the Easement. The Forest Service has no duty under the terms of this Plan to inspect the activities or facilities of the COTP within the Easement for hazardous conditions or compliance with health and safety standards.

Additional Mitigations from COTP FEIS/IEIR

Construction, operation, and maintenance activities will be conducted in a manner that will avoid or minimize degradation of air, land, and water quality. Toxic material will not be released in any lake or water drainage. All construction work and subsequent use of the right-of-way will be consistent with applicable federal, state, and local laws and regulations relating to safety, water quality, and public health.

Radio and television interference complaints will be investigated and efforts will be made to correct the cause of radio and television interference when it has been established the interference has been caused by Project facilities.

Reasonable mitigations will be applied to correct problems of Project-caused induced currents and voltages on objects sharing or adjacent to the right-of-way.

Remove all flammable vegetation a minimum of 30 feet from towers and conductors or as required by California Public Resources Code, Sections 4292 and 4293.

Dispose of all vegetation cleared from the right-of-way in an appropriate manner subject to federal, state, or local regulations.

Equip all construction vehicles operating along the right-of-way with spark arresters as required.

Equip all construction vehicles working along the right-of-way with appropriate fire-fighting equipment. Equipment to be used will be determined through consultation with USFS, California Department of Forestry, and local fire districts requirements, where appropriate.

Herbicides will not be used until permission is obtained from landowners or land managing agencies.

There will be no aerial application of herbicides. Herbicides will be used to hand treat those stumps that could potentially resprout and interfere with the conductors. Limited amounts of herbicides will be used to control unwanted plant growth within the substation areas.

All regulations governing the use of herbicides (EPA, California State Department of Food and Agriculture, and California County Agricultural Commissions) will be strictly adhered to including (1) the use of licensed and/or registered herbicide applicators as required; (2) use of herbicides in agricultural or urban areas as specified through the permit system administered by the county agricultural commissioners; (3) proper storage requirements; and (4) proper use of registered or classified herbicides in accordance with the most current label of the product.

Supplemental Environmental Review

In the event that Western/TANC proposes to undertake any new construction or re-construction of COTP facilities within the Easement that was not addressed in the COTP FEISIEIR, Western/TANC and the Forest Service shall first complete supplemental environmental review of the proposed undertaking in accordance with the respective requirements of the California Environmental Quality Act and the National Environmental Policy Act.

VII. Roads

Western/TANC will provide funds for surface replacement and maintenance pursuant to a collection agreement as described under Section III Financing above. Road use will be limited to those roads identified in Appendices C.1 and C.2 of the Easement. If Western/TANC elects to use different roads than those listed in Appendices C.1 and C.2 of the Easement, Western/TANC will notify the Forest Service and either amend the Easement or obtain a supplemental Road Use Permit from the Forest Service for that use.

Vehicles permitted under this Plan are limited in size to service vehicles of a capacity of one ton (2,000 pounds) or less. For the use of larger vehicles, additional restrictions shall apply. In accordance with Western's/TANC's use of the Easement roads, Western/TANC will maintain the Easement roads in accordance with the maintenance levels and specifications specified in Appendix H, and the stipulations under the heading Road Maintenance Requirements below. Western/TANC shall comply with all reasonable rules prescribed by the Forest Service for control and safety in the use of project roads and to avoid undue damage to the roads. Damage to roads shall be repaired/corrected by Western/TANC.

Normal Operating Season

Restrictions on the use of certain Easement roads during specific time periods is identified in Appendices C.1 and C.2 of the Easement, and in the Road Maintenance Requirements below. Normal operating season for the purpose of this permit is

considered to be April 15 through November 15, and shall determine adjustments in deposits. Road use fees (maintenance deposits) will be triple for activities occurring between November 15 and April 15 to account for increased maintenance costs associated with road use outside the normal operating season; except, that the Tom Young Road, 40N24Y, has a no winter haul restriction between November 15 and April 15.

Road Maintenance Requirements

The Forest Service may:

- Upon reasonable notice, close the road or restrict its use when, due to weather conditions, or the making of alterations or repairs, unrestricted use would in Forest Service judgment, cause extensive damage, or create hazardous conditions.
- Upon reasonable notice, close the road during periods when, in Forest Service judgment, there is extraordinary fire danger.
- Install traffic controls that, in the Forest Service's judgment, are required for safe and effective use of the road by authorized users thereof.
- Prohibit operation on the roadway of any vehicles or equipment having cleats or other tracks, which will injure the surface thereof.
- Restrict the use of an "active ingredient" as defined in Section 2 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended (86 Stat. 973).

Maintenance shall be performed in accordance with Forest Service specifications or requirements for maintenance as hereinafter listed, or as may be mutually agreed upon from time to time and shall consist of (1) current maintenance requirements as necessary to preserve, repair, and protect the roadbed, surface and all structures and appurtenances; and (2) resurfacing equivalent in extent to the wear and loss of surfacing caused by authorized operations.

On operated portions of non-surfaced road, T803 Surface Blading (see Appendix H, Specification T-800) as needed. If repairs or maintenance operations are needed beyond minor clearing and surface blading, the current version of "Forest Service Specifications for the Construction of Roads and Bridges" and the current version of Specifications shall be used.

Snow Removal Requirements

When Western/TANC determines to remove snow, snow removal shall be done in a manner to preserve and protect the roads, to the extent necessary to insure safe and efficient transportation of materials, and to prevent excessive erosion damage to roads, streams, and adjacent lands. Snow removal work by Western/TANC may include:

- Removal of snow from entire road surface width including turnouts.

- Removal of snow slides, earth slides, fallen timber, and boulders that obstruct normal road surface width.
- Removal of snow, ice, and debris from culverts so that the drainage system will function efficiently at all times.
- All items of snow removal shall be done currently as necessary to insure safe, efficient transportation. Work shall be done in accordance with the following minimum standards of performance:
- All debris, except snow and ice that is removed from the road surface and ditches shall be deposited away from stream channels at agreed locations.
- During snow removal operations, banks shall not be undercut nor shall gravel or other selected surfacing material be bladed off the roadway surface.
- Ditches and culverts shall be kept functional during and following roadway use.
- Snow berms shall not be left on the road surface. Berms left on the shoulder of road shall be removed and/or drainage holes shall be opened and maintained. Drainage holes shall be spaced as required to obtain satisfactory surface drainage without discharge on erodible fills.
- Dozers shall not be used to plow snow on system roads without written approval of Forest Service.
- Snow must not be removed to the road surface. A minimum two-inch depth must be left to protect the roadway.
- Damage from or as a result of snow removal shall be restored in a timely manner.

Other Mitigations from the COTP FEISIEIR

Where vegetation of high density or low diversity is encountered (such as in forested areas) in the right-of-way, clearing to a harsh right-of-way edge will be avoided. Instead, it will be done to emulate natural clearings with irregular edges (e.g., feathering).

Compliance with applicable federal and state laws and regulations regarding protected plant and animal species will be monitored. Construction activities will be conducted in a manner to avoid or minimize disturbance. Actions will not be taken that destroy or significantly or adversely modify the habitats of such species.

The retention or encouragement of native vegetation as a natural means of revegetation will be a main goal of the site planning for tower sites, the right-of-way, substations, and other facilities especially in herbaceous rangeland, shrub and brush rangeland and mixed rangeland.

Vegetation diversity will be maintained on rights-of-way through forested areas.

Disturbance of forest vegetation sites that are rare in a regional area will be minimized.

Where there are unavoidable adverse impacts to wetland areas, such as at substation sites, mitigation will be developed in accordance with the U.S. Fish and Wildlife Mitigation Policy.

Precautions will be taken to protect all public land surveying monuments and property corners.

The COTP Participants and/or its contractors or other entities responsible for the operation and maintenance of the transmission line will comply with all conditions imposed upon the use of existing roads by managing agencies, including seasonal and/or other limitations or restriction, the payment of excess size and weight fees, and the posting of bonds conditioned upon repair of road damage.

Use directional felling on the right-of-way so as to minimize damage to trees that are adjacent to the right-of-way.

Retain visual buffers by minimizing vegetation clearing along roads and highways, rivers, trails, and near residential areas.

Minimize the visibility of substation and communication sites from roads, recreation areas, and developed land uses through careful site planning, positioning of equipment, screen planting, and preservation of existing tree cover.

FUELS TREATMENT PLAN

Annual Hazard Reduction Plan

Following annual reconnaissance of the permit area, Holder will submit a hazard reduction treatment plan to the Forest Service. If feasible, this plan may be staged to identify multiple entries over several years (3 to 5). This plan will be as follows:

Prior to June 1 each year, Holder will submit a plan to the Forest Service, which includes the following items:

- Location of treatment area(s) on GIS database by tower numbers or tower span
- List of access roads necessary for operations.
- Known sensitive resources and applicable Project Conservation Measures.

Holder shall identify the trees to be removed either by paint/flagging, or by height description and the outer boundaries for clearing where large numbers of trees are identified.

Prior to July 1 of each year, the Forest Service may conduct a site visit. Merchantable timber may be marked for sale if the total volume warrants. Depending on the area identified and the estimate of trees removed, it may be necessary for a holder representative to attend the site visit. The Forest Service may also review any unmerchantable trees and brush to be removed to determine the necessary fuel treatment measures. Limited operating periods may be imposed for reconnaissance and hazard reduction activities when weather, soil conditions, or other environmental constraints (e.g., nesting seasons) dictate.

When trees are cut, stump heights shall not exceed eight (8) inches above ground line when measured on the uphill side of the tree. Un-merchantable saw logs and fuel wood material may be treated as fuel wood. Fuel wood material is generally all species at least 8 feet long and 6 inches diameter at the small end. Where fuel wood recovery and utilization is jointly determined to be not practical, fuel wood will be treated as noted below. Slash, rocks and soil shall not be placed in lakes, meadows, streams, or streamside protection zones.

Emergency Tree Removal

Within ten (10) days following the cutting of any emergency trees, Holder shall notify the Forest Service of the location, number and size of the trees cut and the Forest Service shall make a determination if a timber sale contract or fuel treatment plan is needed. This determination will be based on both resource and economic factors including but not limited to location, amount, size, access, and existing fuel load. For incidental amounts that would not reasonably justify the administration and conduct of a planned timber harvest, the Forest Service may determine that no additional treatment is required beyond specific fuel treatment.

If a timber sale contract or fuel treatment plan is needed, the Forest Service and Holder will negotiate the timing of the required activity. Treatment may be postponed and incorporated with future treatments, removals, or planned operation and maintenance visits if they are reasonably anticipated and no additional hazard or loss of value is expected. Conversely, treatment may be required within a short timeframe if other resource impacts are a concern. Examples include but are not limited to insect infestation areas or high fire hazard and fuel load.

Fuels Treatment

Debris Removal/Slash Disposal

Slash and trees removed as emergency trees or during annual hazard reduction shall be treated by one or a combination of the following methods, as designated on the annual hazard reduction plan:

A. chipping
B. decking
C. lopping and scattering
D. piling
E. off-site piling for burning
F. Mastication (either with or without herbicide application)

Lopping and scattering will be approved only where fuels are very sparse. The Forest Service will review the annual hazard reduction treatment plan and approve the treatment method.

Fuel Treatments:

Chipping: All slash, 3 feet or more in length and up to 6 inches in diameter, shall be processed through a chipping machine and deposited to a loose depth not exceeding 6 inches. Chips may be hauled off-site and utilized as biomass where economically feasible.

Decking: All slash 3 feet or more in length and a minimum of 6 inches in diameter shall be skidded and decked along roadway or at designated landings for public use and disposal.

Lopping and Scattering: All slash material not decked or chipped will be lopped and scattered in a manner that will not create a depth of more than eighteen (18) inches, and that will ensure a separation of six (6) inches or more between all materials three (3) feet or larger. Remaining materials six (6) inches or larger in diameter will be cut into a maximum of four (4) foot lengths. Lopping may be done by axes or power saws.

When scattered, slash must not be left in streambeds, natural drainages, roadside ditches or collecting basins at the entrance of culverts. Slash must not be scattered so that concentrations lie around the base of any live trees.

Piling: If chipping or lop/scatter is not feasible and holder or its operating agent opts to pile slash for burning, holder or its operating agent and the Forest Service shall agree on designated piling locations. In areas designated, holder or its operating agent shall pile unutilized material that is 8 inches or bigger on the large end and at least 10 feet or more long. Unless agreed to otherwise, in writing, piling shall be done in the same normal operating season.

Construction and Size of Piles: All piles shall be as compact as possible with the heavier material placed on top. Height of piles shall be not less than 3 feet and not more than 5 feet with a diameter of not more than 8 feet. All piles shall have good base to keep the pile from toppling.

The slash shall be piled so that the length is at a right angle to direction of the contour. All material in excess of 6 feet in length shall be cut before placing in the pile. Material protruding 2 feet or more beyond the general profile of the pile will be bucked off and added to the pile. All piles shall be a least 30 feet apart to prevent premature ignition during burning.

Location of Piles: The Forest Service and holder or its operating agent shall agree to pile locations. Piles will be located so that burning will not cause damage to standing green trees. Unless otherwise approved by the Forest

Service, this will be construed to be a least 20 feet from the bole of any live tree. Piles will be located at least 30 feet from any adjacent pile unless otherwise specified.

All piled slash will be burned. If burning is performed by the Forest Service, a collection agreement will be used to fund this activity. If burning is performed by holder, or its operating agent, prior written approval of the authorized officer is required and the burning shall be done in accordance with restrictions, conditions, and requirements outlined in the Burning Permit. Piles that do not consume due to dirt or poor construction will be repiled by the Holder if the Forest Service repile's the units a collection agreement will be used to fund the activity Slash may be piled from June 1 through October 31 except, when restricted by a Limited Operating Period.

Mastication: Brush will be mowed or masticated to a height of 6"–8" above ground level. Small clumps of vegetation will remain untreated to provide wildlife habitat and thermal shading. These clumps will be approx 1acre per 10 acres of treatment or 10% of treated acres. Equipment used in treatment units will be washed or air blown free of noxious weeds prior to entering treatment units and before leaving treatment units.

FIRE PLAN

The Fire Precautionary Period is **May 1** to **October 31**.

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish a suppression plan for fires within the right of way. The provisions set forth below also specify conditions under which contract activities will be curtailed or shut down.

Holder shall take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, shall be responsible for preventing the escape of fires set directly or indirectly as a result of operations, and shall extinguish all such fires which may escape.

Holder shall equip each internal combustion engine with a spark arrester, except for motor vehicles equipped with a maintained muffler and shall permit and assist in periodic testing and inspection of required fire equipment. One fire extinguisher meeting specifications of C.P.R.C. Section 4431 shall be kept with each operating power saw. A size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can but not more than 300 feet from each power saw.

Fire tools kept at each operating landing shall be sufficient to equip all employees in the operations associated with each project. Holder shall provide a water tank truck or trailer on or in proximity to right of way during Holder 's Operations hereunder during Fire Precautionary Period unless otherwise agreed. When Project Activity Level B or higher is in effect, a tank truck or trailer shall be on or immediately adjacent to each active landing unless otherwise excepted when hot saw technology is being used.

Holder shall provide continuous access to all roads for emergency vehicles

The Holder must secure a special written permit from the District Ranger or designated representative before engaging in any of the activities listed below. The terms and conditions of any of the permits required for this contract are as shown on copies attached to the Fire Plan.

(1) Blasting and Storage of Explosives and Detonators. (Explosives Permit required by California Health & Safety Code, Section 12101.)

(2) Burning.

(3) Air Pollution. (Issued by local State or County Air Pollution Control Districts, as applicable.)

(4) Welding and Cutting.

Regulations for Burning: Before setting any fires, the Holder shall notify the authorized officer. Special care shall be taken to prevent scorching or causing any damage to adjacent structures, trees, and shrubbery. Piles of material to be burned shall be of such size and so placed that during burning no damage shall result to adjacent objects.

Smoking and Fire Rules: Smoking shall not be permitted during fire season, except in a barren area or in an area cleared to mineral soil at least three feet in diameter (CPRC 4423.4).

Storage and Parking Areas: Equipment service areas, parking areas, and gas and oil storage areas shall be cleared of all flammable material for a radius of at least 10 feet unless otherwise specified by local administrative unit. Small mobile or stationary internal combustion engine sites shall be cleared of flammable material for a slope distance of at least 10 feet from such engine.

EMERGENCY MEASURES

For maintanance activities, holder shall obtain current **Project Activity Level** information from the Forest Service.

The Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant additional restriction of activities. Holder shall obtain the predicted Project Activity Level by calling the phone number **866-242-9941** before starting work each day. If practicable, Forest Service will determine the following day's activity level by 6:00 PM local time. If predictions made after 6:00 PM are significantly different than originally estimated, Forest Service will inform Holder when changes in restrictions or industrial precautions are indicated.

Forest Service may change the Project Activity Levels to other values upon revision of the National Fire Danger Rating System and may change the specific Project Activity Levels and/or requirements when such changes are necessary for the protection of the National Forest. When sent to Holder, the revised Project Activity Levels will supersede previous levels.

Table version 6/13/2006

PROJECT ACTIVITY LEVEL

Level	*Project Activity Requirements*
A	Minimum required by Section 3 1. PAL levels are cumulative, Ev level would include all preceding PAL requirements.
B	1. A fire patrolperson is required for mechanical operations from cessation of operations until 2 hours after operations cease or sunset, which ever occurs first. 2. (Additional restrictions specified by the forest.)
C	1. The following operations are prohibited from 1:00 PM until 8:00 PM local time: a. Blasting 2. (Additional restrictions specified by the forest.)

D	1. The following restrictions apply: a. No blasting after 10:00 AM b. Welding or cutting of metal only by special permit c. No Burning without a permit 2. The following activities may not operate after 1:00 PM local time unless fire patrolperson(s) walks all areas operated that day once per hour until sunset local time and has the capability of notifying the designated Forest Service Dispatch Center within fifteen (15) minutes of discovery of a fire: a. Chipping outside of landings and roadbeds b. Chainsaw operations outside of landings and roadbeds c. Tree felling operations d. Ripping roads and landings e. Mastication 3. (Additional restrictions specified by the forest.)
Ev	1. The following operations are prohibited: a. Blasting b. Welding or cutting metal c. Burning 2. Following activities may operate when fire patrolperson walks from 9:00 AM until local sunset all areas once per hour that were mechanically operated that day. A. Activities that may operate all day: 1. Equipment servicing at approved sites. 2. Roads: Dust abatement or rock aggregate installation (does not include pit or quarry development) B. All other Operations are permitted until 1:00 PM local time. C. (Additional restrictions specified by the forest.)
E	The following activities may operate subject to B1. and B2. 1. Equipment at approved sites may be serviced. 2 Roads: Dust abatement or rock aggregate installation (does not include pit development). 3. Chainsaw operation associated with loading at approved landings.

REPORTING ALL WILD FIRES:

Holder's employees shall report all fires as soon as possible but no later than 15 minutes after initial discovery to any of the following Forest Service facilities and/or personnel listed below, but not necessarily in the order shown:

	Name	Office Address and/or telephone	Home address and/or telephone
Dispatch Center	**Shasta Trinity NF ECC**	**(530) 226-2400**	**same**
Nearest FS Station	**McCloud District**	**(530) 964-2184**	
Division Chief	**Paige Boyer**	**(530) 964-3740**	**(530) 925-1607 Cell**
Battalion Chief	**Brian Ramsey**	**(530) 964-3741**	**(530) 925-1670 Cell**
District Ranger	**Mike Hupp**	**(530) 925-1600**	
Special Uses	**Stacy Smith**	**(530) 926-9643**	

When reporting a fire, provide the following information;

1. Your Name
2. Call back telephone number
3. Project name
4. Location:
   - Legal description (Township, Range, Section)
   - Descriptive location (Reference point)
5. Fire Information:
   - Acres
   - Rate of Spread
   - Wind Conditions

Hazardous Materials

Definitions:

Oil: Includes oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, and oil refuse.

Hazardous Substances: Any element, compound, mixture, solution, or substance which, when released into the environment, may present substantial danger to the public health and welfare or the environment. (This excludes petroleum products, and natural or synthetic gases useable for fuel). Any substance found and not readily identifiable should be treated as hazardous until otherwise identified.

Hazardous Spill: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment of an oil or hazardous substance.

Discovery and Notification: Discovery of, or the accidental discharge of a significant amount of, oil and/or hazardous materials shall be reported immediately to the nearest Interagency Command Center. For the purposes of the preceding requirement, a "significant amount" shall be such an amount, which, under the circumstances of the discharge, triggers another reporting requirement under any applicable federal, state or local law or regulation. Holder shall clean up or otherwise remediate any release, threat of release, or discharge of hazardous materials that occurs either on site or in connection with holder's activities, whether or not those activities are authorized under the

permit. Holder shall perform cleanup or remediation immediately upon discovery of the release, threat of release, or discharge of hazardous materials. Holder shall perform the cleanup or remediation to the satisfaction of the authorized officer and at no expense to the United States. Upon revocation or termination of the permit, holder shall deliver the permit area to the Forest Service free and clear of contamination.

Storage of Hazardous Materials: Holder shall not store any hazardous materials of any type or in any quantity on the Permit area without obtaining the prior written approval of the authorized officer, and this approval shall not be unreasonably withheld. Holder shall also request approval by the State and/or County when required. Any request for storage of hazardous materials will require an Emergency Response Plan, Health and Safety Plan and Spill Plan which includes specific terms and conditions including, but not limited to, the specific type of materials to be stored, the volume and type of storage. Each plan will be specific to the request. Such terms and conditions proposed by holder are subject to approval by the authorized officer. If any hazardous materials are used or stored at the site, the holder shall deliver and maintain a surety bond as required by the authorized officer.

Spill Prevention Control and Countermeasure Plan: If the total oil and oil product storage within the Easement exceeds 1,320 gallons, or if any single container exceeds a capacity of 660 gallons, holder shall prepare a Spill Prevention Control and Countermeasure (SPCC) Plan. Such plan shall meet applicable Environmental Protection Agency (EPA) requirements (40 CFR 112) including certification by a registered professional engineer, and the Above Ground Petroleum Storage Act of 1989 (SB 1050) as amended.

Certification upon Revocation or Termination: If holder uses or stores hazardous materials within the permit area, upon revocation or termination of the permit, holder shall provide the Forest Service with a report certified by a professional or professionals trained in environmental site assessments and acceptable to the Forest Service. The report shall determine if the permit area has been contaminated by the presence of hazardous materials and if there has been a release or discharge of hazardous materials upon the permit area, into surface water at or near the permit area, or into groundwater below the permit area during the term of the permit. If a release or discharge has occurred, the professional or professionals shall document and certify that the release or discharge has been fully remediated and that the operations of the holder are in compliance with all Federal, State and local laws applicable within the permit.

NORTH AREA RIGHT-OF-WAY MAINTENANCE PROGRAM
WESTERN AREA POWER ADMINISTRATION

The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. Because activities are proposed for Riparian Reserves the proposed action and all action alternatives were evaluated to determine how planned activities would affect implementation of the Aquatic Conservation Strategy. This evaluation was accomplished by evaluating the effects of proposed management activities in Riparian Reserves for each of the nine Aquatic Conservation Strategy Objectives (Shasta-Trinity National Forest Land and Resource Management Plan, 1994). A description of the how the proposed action and alternatives will affect each ACS objective follows.

Evaluation of the Nine ACS Objectives and how the Proposed Action "meets", "does not adversely affect", or "does not retard or prevent attainment of" or otherwise achieve ACS objectives at the 5th field watershed scale.

Aquatic Conservation Strategy Objectives	How the Proposed Activities for All Action Alternatives Meet the ACS
1) Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.	The proposed actions and alternatives do not propose any additional impacts to watersheds, and provide both Standard Operating Procedures including Best Management Practices and resource specific Project Conservation Measures for both water features and riparian dependant species.
2) Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.	This project does not propose any changes to watercourse alignments or flow regimes. All watercourses will be protected from impacts using both Standard Operating Procedures and Project Conservation Measures detailed in the EA and Operations Plan. Connectivity will not be changed or affected as a result of operation and maintenance of the right of way corridors.
3) Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.	Water courses, wetlands and vernal pools within the right of way will be avoided during maintenance and operation of the power lines. Buffers around each feature vary from 50 feet to 300 feet depending on the proposed maintenance activtiy. Only hand operations are permitted within the perimeter of aquatic and riparian features.
4) Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.	Standard Operating Procedures including Best Management Practices and Project Conservation Measures will ensure that water quality is not affected by routine maintenance activities. Riparian vegetation will be maintained and only those limbs or tops that encroach or threaten to encroach into the legally required clear area will be hand trimmed and removed.

Aquatic Conservation Strategy Objectives	How the Proposed Activities for All Action Alternatives Meet the ACS
5) Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.	All road maintenance and repair will be conducted according to the Standard Operating Procedures and the Project Conservation Measures to protect soils and water resources within and on access roads leading to the rights of way. Operations will be conducted in summer and fall when flows are at their lowest point. No new road construction is proposed that could create additional sources of sediment.
6) Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats, and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.	Operation and maintenance activities will not affect in-stream flows on watercourses within the rights of way. Buffering and limits on methods of vegetation maintenance will limit impacts on water courses and wetlands to negligible levels. Activities near water courses or wetlands will be scheduled for summer and fall to take advantage of the lowest flows and driest conditions.
7) Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.	Operation and maintenance of the line will occur after the winter/spring period of rainfall and will have no material affect on the natural cycle of flooding and inundation of meadows, vernal pools and riparian wetlands.
8) Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.	Buffering around all water courses, wetlands, and vernal pools will limit the impacts to these resources. Species composition and structural diversity will be unaffected. Any clearing or maintenance work will be limited to those actions needed to keep the legally mandated clear area around the wires within the rights of way.
9) Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.	Buffering around all water courses, wetlands, and vernal pools will limit impacts to these resources and maintain habitats needed to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.