

Final Environmental Impact Statement



Trinity Public Utilities District Direct Interconnection Project

Western Area Power Administration – Sierra Nevada Region



**Volume 2:
Appendices
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DOE/EIS-0389

COVER SHEET

LEAD FEDERAL AGENCY: U.S. Department of Energy

COOPERATING AGENCIES: U.S. Forest Service, U.S. Bureau of Land Management, U.S. Bureau of Reclamation

TITLE: Final Environmental Impact Statement for the Trinity Public Utilities District Direct Interconnection Project, DOE/EIS-0389

LOCATION: Trinity County, California

CONTACT: For additional information on this final environmental impact statement, contact:

Mr. Mark J. Wieringa
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228
Telephone: (800) 336-7288
Fax: (720) 962-7263
Email: wieringa@wapa.gov

For general information on the U.S. Department of Energy National Environmental Policy Act process, write or call:

Ms. Carol M. Borgstrom, Director
Office of NEPA Policy and Compliance
Health, Safety and Security (GC-20)
U.S. Department of Energy
Washington, DC 20585
Telephone: (202) 586-4600 or
(800) 472-2756

ABSTRACT: The Western Area Power Administration (Western), part of the U.S. Department of Energy (DOE), prepared an environmental impact statement (EIS) on the construction and operation of proposed power transmission facilities in Trinity County, California. The U.S. Forest Service (USFS), the Bureau of Land Management (BLM), and the Bureau of Reclamation (Reclamation) participated in the preparation of the EIS, which addresses the proposed removal of about 5.3 mi of 12-kilovolt (kV) distribution line and the construction and operation of about 16 mi of new 60-kV transmission line, a tap structure and associated equipment, and a new switchyard. The EIS addresses the environmental impacts of the proposed project. Western's EIS process complied with the National Environmental Policy Act (NEPA; see volume 42 of *United States Code* [42 U.S.C.] §§ 4321–4347, as amended), Council on Environmental Quality regulations for implementing NEPA (title 40, parts 1500–1508 of the *Code of Federal Regulations* [40 CFR parts 1500–1508]), and DOE NEPA implementing procedures (10 CFR part 1021). Western's preferred alternative is the proposed action as described in the EIS; other than the no action alternative, no other viable reasonable alternatives were identified. Questions about this final EIS should be sent to Western at the address below.

Mr. Steve Tuggle, Natural Resources Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, California 95630-4710

APPENDIX A

NOTICE OF INTENT

35266

Federal Register / Vol. 71, No. 117 / Monday, June 19, 2006 / Notices

Education, Room 5C141, 400 Maryland Avenue, SW., Washington, DC 20202.
[FR Doc. 06-5528 Filed 6-16-06; 8:45 am]
BILLING CODE 4000-01-M

DEPARTMENT OF ENERGY

Bonneville Power Administration

Supplement to Administrator's Record of Decision on Bonneville Power Administration's Service to Direct Service Industrial (DSI) Customers for Fiscal Years 2007-2011

AGENCY: Bonneville Power Administration (BPA), Department of Energy.

ACTION: Notice of final policy.

SUMMARY: BPA Administrator Stephen J. Wright signed a supplement to the Administrator's Record of Decision (ROD) on Bonneville Power Administration's Service to Direct Service Industrial (DSI) Customers for Fiscal Years 2007-2011. The original ROD was signed on June 30, 2005, and outlined BPA's tentative decision to offer a surplus power sales contract to each of its remaining three aluminum company DSI customers, totaling in aggregate 560 aMW, at a capped cost of \$59 million per year, and a 17 aMW surplus power sales contract to its one remaining nonaluminum company DSI customer. BPA will now move forward on signing contracts with the DSIs for the FY 2007-2011 period. The post-2011 period will be addressed in the upcoming Regional Dialogue public process.

DATES: On May 31, 2006, the Supplemental ROD for DSI service for FY 2007-2011 was signed.

ADDRESSES: The ROD is available on BPA's Record of Decision Web site at <http://www.bpa.gov/corporate/pubs/RODS/2006/> and BPA's Regional Dialogue Web site: www.bpa.gov/power/regionaldialogue. Copies are also available by contacting BPA's Public Information Center at (800) 622-4520.

FOR FURTHER INFORMATION CONTACT: Contact Scott Wilson, Customer Account Executive, Bulk Marketing and Transmission Service, at (503) 230-7638, for information regarding the Supplemental Record of Decision on Bonneville Power Administration's Service to Direct Service Industrial (DSI) Customers for Fiscal Years 2007-2011.

Issued this 7th day of June, 2006.
Stephen J. Wright,
Administrator and Chief Executive Officer.
[FR Doc. E6-9584 Filed 6-16-06; 8:45 am]
BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Western Area Power Administration

Construction and Operation of the Trinity Public Utility District Direct Interconnection Project, Trinity County, CA

AGENCY: Western Area Power Administration, DOE.

ACTION: Notice of Intent To Prepare an Environmental Impact Statement and conduct scoping meetings; Notice of Floodplain and Wetlands Involvement.

SUMMARY: The Western Area Power Administration (Western), Department of Energy (DOE), intends to prepare an environmental impact statement (EIS) to construct and operate proposed power transmission facilities in Trinity County, California. The U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) will participate in the preparation of the EIS, which will address the proposed removal of about 5.3 miles of 12-kilovolt (kV) distribution line, and the construction and operation of about 16 miles of new 60-kV transmission line, a tap structure and associated equipment, and a new switchyard. Input for the scope of the EIS may be provided in writing or at a scoping meeting in the project area.

DATES: Open-house public scoping meetings will be held:

1. July 10, 2006, 3 p.m.-7 p.m., Weaverville, CA.
2. July 11, 2006, 3 p.m.-7 p.m., Redding, CA.

The public scoping period starts with the publication of this notice in the *Federal Register* and will end at midnight on July 19, 2006. The Draft EIS is expected to be available in October 2006 and the Final EIS in April 2007. Western's Record of Decision (ROD) is expected in May 2007. The Draft EIS, Final EIS, and ROD will be issued only after Western's Administrator approves these documents.

ADDRESSES: The meeting locations are:

1. Weaverville—Victorian Inn, 1709 Main Street, Weaverville, CA 96093.
2. Redding—Oxford Suites, 1967 Hilltop Drive, Redding, CA 96002.

Written comments regarding the scoping process should be addressed to Ms. Cherie Johnston-Walstead, Western Area Power Administration, Sierra Nevada Region, 114 Parkshore Drive, Folsom, CA 95630-4710; fax (916) 985-1934; or e-mail walstead@wapa.gov.

FOR FURTHER INFORMATION CONTACT: Mr. Mark Wieringa, National Environmental Policy Act (NEPA) Document Manager, Western Area Power Administration, Corporate Services Office, P.O. Box

281213, Lakewood, CO 80228-8213; fax (720) 962-7263, or e-mail wieringa@wapa.gov for information about the proposed project, to be added to the project mailing list, or to receive a copy of the Draft EIS. For general information on DOE's NEPA review procedures or status of a NEPA review, contact Ms. Carol M. Borgstrom, Director of NEPA Policy and Compliance, EH-42, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, telephone (202) 586-4600 or (800) 472-2756.

SUPPLEMENTARY INFORMATION: Western is a power marketing agency of DOE that markets Federal electric power to statutorily defined customers including project use, municipalities, irrigation districts, and Native American tribes. Western initially proposed to prepare an Environmental Assessment (EA) for the proposed Trinity Public Utility District (PUD) Direct Interconnection Project on February 25, 2005. The USFS expressed concerns regarding potential impacts to the northern spotted owl and designated critical habitat and on Late Successional Reserve forest areas. Based on a review of the USFS concerns, Western determined to prepare an EIS, with USFS and BLM as cooperating agencies.

The EIS will address the environmental impacts of the removal of about 5.3 miles of existing 12-kV distribution line and the construction and operation of about 16 miles of new 60-kV transmission line, a tap structure and associated equipment, and a new switchyard in Trinity County. Western's EIS process will comply with NEPA (42 U.S.C. 4321-4347, as amended), Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations [CFR] parts 1500-1508) and DOE NEPA implementing procedures (10 CFR part 1021). Because the proposed project may involve action in floodplains, the EIS will include a floodplain assessment and floodplain statement of findings following DOE regulations for compliance with floodplain and wetlands environmental review (10 CFR part 1022).

Purpose and Need

Western proposes to establish a direct connection between Western's Central Valley Project (CVP) and Trinity PUD at a higher voltage to strengthen power deliveries and enhance reliability of service. Delivery of CVP power to Trinity County, in part, is authorized by the Trinity River Division Act.

Proposed Project Description

The proposed project would include (1) removal of about 5.3 miles of old 12-kV distribution line from Trinity Power

Plant at Trinity Dam to a tap point about 0.75 mile west of Lewiston Dam and construction of a new 60-kV transmission line to replace the 12-kV line on an expansion of the existing right-of-way (ROW), (2) construction of a tap structure with three-way switch equipment on the new 60-kV transmission line at the location near Lewiston Dam and a radial 1.2 miles tap line south to the existing Lewiston Substation on Trinity Dam Road, parallel to an existing distribution line, and (3) construction of a new 60-kV transmission line on a new ROW from the tap point west about 8.5 miles to the proposed new Weaverville Switchyard, which would be located about two miles south of Weaverville on the east side of Highway 299. Western will use the EIS scoping process to explore and refine any reasonable alternatives to the proposed route.

The new single-circuit 60-kV line would be constructed on single poles with steel reinforced aluminum conductors on horizontal line post insulators. An overhead ground wire or a fiber optic cable for remote operation of the transmission line would be mounted above the conductors. The poles would be 50 to 100 feet high, and the span between poles would average 350 feet. Specific spans could range from 100 to 500 feet. On average, there would be 17 poles per mile of transmission line, with approximately 272 poles required for the entire project. Pole heights, locations, and span lengths would vary depending on terrain and topography; structural limitations; cost; visual considerations; existing and proposed land uses; crossings of roads, canals, and other overhead lines; and other features specific to the project. Each pole would be set 8 to 10 feet deep in an augured hole, backfilled with excavated material. Some locations would not be accessible by vehicles on the ground; at these locations holes would be hand-dug and the poles flown in and set by helicopter.

The proposed new transmission line would require an 80-foot wide ROW. Generally the ROW would be acquired by Western as a utility easement; the underlying land owner or land manager would retain their existing ownership. Existing access roads and logging roads would be used to the extent possible for construction access, with a total of approximately two miles of new access roads required. These would primarily be short spurs from existing access roads to structure locations which would be restored after construction and not maintained as permanent roads. ROW clearing for the transmission line and new roads would require cutting

trees. Western would enter into a timber contract with the landowner or land management agency for commercial timber produced from ROW clearing activities. Slash would be chipped for soil stabilization or piled for later burning in accordance with landowner or manager requirements.

Additional details on the individual segments follow:

Segment 1—Trinity Power Plant to Lewiston Tap

Segment 1 would consist of about 5.3 miles of new 60-kV transmission line between Trinity Substation at Trinity Power Plant and the tap point west of Lewiston Dam. Except for the last couple of spans to the tap point, and dropping off the hill east of the fish hatchery, the new line would be centered on an existing ROW presently occupied by a Trinity PUD 12-kV distribution line. This existing line would be removed and the ROW expanded to 80 feet in width to accommodate the larger transmission line. The old poles are not chemically treated and would be left along the edge of the ROW, reutilized by the landowner or manager, or cut up and placed in the slash piles for burning according to the preference of the landowner or manager. Hardware, conductors, and insulators would be removed from the ROW and reutilized or recycled.

Segment 1 would require about 90 new poles, four pulling sites, and 0.5 mile of access road. This segment passes through steep and rugged terrain, mostly within the Shasta-Trinity National Forest, with portions inside the Shasta-Trinity National Recreation Area, both administered by the USFS. About 1.0 mile is administered by the Bureau of Reclamation, 0.5 mile is owned by Sierra Pacific Industries (SPI), and 0.25 mile is private land.

Segment 2—Lewiston Tap to Lewiston Substation

Segment 2 would consist of constructing approximately 1.2 miles of new 60-kV transmission line between Lewiston Tap and Lewiston Substation within a new ROW parallel to an existing Trinity PUD distribution line. This radial feed would begin at the Lewiston Tap structure at the termination of Segment 1 and proceed south to Trinity PUD's existing Lewiston Substation on Trinity Dam Road north of Lewiston. The tap structure would be a steel pole with a three-way switch to accommodate the incoming Segment 1 line from Trinity Substation, the Segment 2 tap line to Lewiston Substation, and the outgoing Segment 3 line to the new Weaverville

Substation. Existing access roads would be used, with only very short spurs from the existing parallel distribution line access road to the new structure locations as needed.

Segment 2 would require about 20 new poles, two pulling sites, and 0.3 mile of access road. This segment would cross a mix of National Forest, SPI, BLM, and private land as it parallels the Trinity River on the west bank.

Segment 3—Lewiston Tap to Weaverville Switchyard

Segment 3 would consist of about 8.5 miles of new 60-kV transmission line in a new ROW starting at Lewiston Tap. The line route would proceed west and northwest, then generally southwest to the site of the proposed new Weaverville Switchyard, located about two miles south of the center of Weaverville on the east side of Highway 299. Most of the area that would be crossed is also steep and rugged terrain similar to Segment 1. Existing access and logging roads would be used to the extent possible, with new roads limited to spurs to reach individual structure locations. Inaccessible areas would be reached by helicopter.

Segment 3 would require about 144 new poles, six pulling sites, and 1.2 miles of new access road. This segment would pass through land mostly owned by SPI, with much of the remaining property managed by BLM. About 0.25 mile is privately owned. Although this area is also rugged terrain, the route follows an existing SPI main access road along a ridge for much of its length avoiding the steeper areas and minimizing the need for new access roads.

Weaverville Switchyard

The proposed new Weaverville Switchyard would be constructed about two miles south of the center of Weaverville on the east side of Highway 299. This facility would have a footprint of approximately 90 by 110 feet, which would be located next to an abandoned section of old Highway 299. The old highway section would be used for access to the new switchyard. Two spur lines would connect the switchyard with a 60-kV transmission line nearby, presently owned by the Pacific Gas and Electric Company. This 60-kV transmission line would be acquired by the Trinity PUD. The spur lines would replace one span of the existing line, thus looping the line in and out of the proposed new switchyard. The site is forested and would be obtained from BLM. Any commercial timber resulting from clearing the site would be

purchased from BLM under one of the timber contracts.

Alternatives

An alternative alignment of the tap line from Lewiston Tap to Lewiston Substation was identified, and an alignment crossing above Lewiston Dam was also explored. Western will use input from the public scoping process to determine if other alternatives should be developed and analyzed.

No Action Alternative

Under the No Action alternative, none of the proposed facilities would be constructed, and the existing 12-kV distribution line would be left in place.

Agency Responsibilities

Western has determined an EIS is required, in light of concerns about potential impact on northern spotted owls, their designated critical habitat, and on Late Successional Reserve forest. Western will be the lead Federal agency for preparing the EIS, as defined in 40 CFR 1501.5. In addition, USFS and BLM have been designated cooperating agencies. Western invites interested agencies, tribes, organizations, and members of the public to submit comments or suggestions to assist in identifying environmental issues and in determining the proper scope of the EIS. Western will invite other Federal, State, and local agencies, and tribal governments with jurisdiction by law or special expertise, with respect to environmental issues, to be cooperating agencies on the EIS, as defined in 40 CFR 1501.6. Such agencies also may make a request to Western to be a cooperating agency. Designated cooperating agencies have certain responsibilities to support the NEPA process, as specified in 40 CFR 1501.6 (b).

Environmental Issues

This notice is to inform agencies and the public of the proposed project and solicit comments and suggestions for consideration in preparing the scope of the EIS. To help the public frame its comments, this notice contains a list of potential environmental issues Western has tentatively identified for analysis. These issues include:

1. Impacts on protected, threatened, endangered, or sensitive species of animals or plants or their critical habitats;
2. Impacts on other biological resources;
3. Impacts on land use, recreation, and transportation;
4. Impacts on floodplains and wetlands;

5. Impacts on cultural or historic resources and tribal values;

6. Impacts on human health and safety;

7. Impacts on air, soil, and water resources (including air quality, surface water impacts, and ground water impacts);

8. Visual impacts; and

9. Socioeconomic impacts and disproportionately high and adverse impacts to minority and low-income populations.

This list is not intended to be all-inclusive or to imply any predetermination of impacts. Western invites interested parties to suggest specific issues within these general categories, or other issues not included above, to be considered in the scope of the EIS.

Public Participation

Opportunities for public participation are planned for the entire EIS process. Western anticipates the EIS process will take about 12 months and will include open-house public scoping meetings; consultation and involvement with appropriate Federal, State, and local agencies, and tribal governments; public review and hearings on the published Draft EIS; a review and comment period; a published Final EIS; and publication of a ROD. The USFS and BLM will publish separate RODs on their agency decisions. Additional informal public meetings could be held in the proposed project area if public interest and issues indicate a need. Western will mail newsletters to the mailing list developed for the proposed project to communicate project status and developments. Anyone may request to be placed on the mailing list.

Western will hold a 30-day scoping period to ensure interested members of the public, representatives of groups, and Federal, state, and local agencies, and tribal governments have an opportunity to provide input on the scope of alternatives and issues that will be addressed in the EIS. As part of the scoping period, Western will hold public open-house scoping meetings near the project area. Interested individuals and groups are invited to attend anytime between 3 p.m. and 7 p.m. according to the dates and locations noted above. The open-house scoping meetings will be informal, with Western representatives available for one-on-one discussions with attendees.

Attendees will have the opportunity to view maps of the proposed transmission line route, learn about the NEPA process and the proposed schedule, suggest changes and improvements to the proposed project,

and obtain additional information.

Written comments regarding environmental issues, alternatives, and other scoping issues may be turned in at the scoping meetings or may be provided by fax, e-mail, U.S. Postal Service, or other carrier to the Western contact provided under Addresses above. To be assured consideration, all comments or suggestions regarding the appropriate scope of the document must be received by July 19, 2006.

Comments on the proposed project may, however, be submitted at any time during the consultation and comment period of the EIS process.

Dated: June 13, 2006.

Michael S. Hacksaylo,
Administrator.

[FR Doc. E6-9585 Filed 6-16-06; 8:45 am]
BILLING CODE 6450-01-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-8185-2]

Gulf of Mexico Program Citizens Advisory Committee Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of meeting.

SUMMARY: Under the Federal Advisory Committee Act (Pub. L. 92-463), EPA gives notice of a meeting of the Gulf of Mexico Program (GMP) Citizens Advisory Committee (CAC).

For information on access or services for individuals with disabilities, please contact Gloria Car, U.S. EPA, at (228) 688-2421 or car.gloria@epa.gov. To request accommodation of a disability, please contact Gloria Car, preferably at least 10 days prior to the meeting, to give EPA as much time as possible to process your request.

DATES: The meeting will be held in conjunction with the Gulf of Mexico Alliance Implementation Workshop and the Gulf of Mexico Program Management Committee on Tuesday, July 18, 2006, from 8 a.m. to 5 p.m.; Wednesday, July 19, 2006, from 8 a.m. to 5 p.m., and Thursday, July 20, 2006, from 8:30 a.m. to 4 p.m.

ADDRESSES: The meeting will be held at the Intercontinental New Orleans Hotel, 444 St. Charles Avenue, New Orleans, LA 70130, 504-525-5566. <http://www.ichotelsgroup.com>.

FOR FURTHER INFORMATION CONTACT:

Gloria D. Car, Designated Federal Officer, Gulf of Mexico Program Office, Mail Code EPA/GMPO, Stennis Space Center, MS 39529-6000 at (228) 688-2421.

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APPENDIX B
PUBLIC SCOPING COMMENTS



**WRITTEN COMMENT
SHEET**

**TRINITY COUNTY PUBLIC UTILITY DISTRICT
DIRECT INTERCONNECTION PROJECT EIS**



If you have any issues, concerns, or questions that you would like addressed in the Trinity Public Utilities District Direct Interconnection Project Environmental Impact Statement (EIS), please comment this response sheet.

Where will the Weaverville Switchyard be located?

Concerned about the location of the switchyard, as there is a limited amount of level land left in the project area that could potentially be used for homes.

Will PG&E be involved in the project?

Please hand in your completed comment sheet today to ensure your input is considered, or if you would like to mail your comments, please use the address below.

Western Area Power Administration
Trinity EIS
P.O. Box 281213
12155 West Alameda Parkway
Lakewood, Colorado 80228-8213

If you prefer, give us a call at 1-800.336-7288 or e-mail trinityeis@wapa.gov

Thank you for your interest and participation!

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APPENDIX C

POTENTIALLY OCCURRING USFS SENSITIVE AND
BLM SPECIAL-STATUS SPECIES

Scientific Name	Common Name	Status	Analysis
Fungi and Lichens			
<i>Albatrellus ellisii</i>	Greening goat's foot	BLM Sensitive	Solitary, scattered, gregarious, or in fused clusters on ground in forests. Fruiting in late summer and autumn. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Boletus haematinus</i>	Red-pored bolete	BLM Sensitive	Solitary to scattered in mixed hardwood/conifer woods; known from coastal forests north of San Francisco; fruiting from late fall to early winter. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Bryoria tortuosa</i>	Yellow-twist horsehair	BLM Sensitive	In California, it is found in the Northwestern California and Cascade Ranges Floristic Provinces. Occurs on trunks and branches of trees in well-lit, open stands, most frequently on oaks and pines, although it has been collected on a large variety of trees and shrubs. This species relies predominantly on tallus fragmentation, a form of vegetative propagation, for reproduction. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Cudonia monticola</i>	No common name	USFS Sensitive	Occurs on <i>Picea</i> spp. needles and coniferous debris. Potentially occurs in the project area.
<i>Collybia racemosa</i>	Branched collybia	USFS Sensitive	Found in clumps on rotting or mummified remnants of gilled mushrooms or seldom in nutrient-rich leaf mulch in forests. Two populations are known from the Shasta-Trinity National Forest within Trinity County. Potentially occurs in the project area.
<i>Leptogium cyanescens</i>	Blue jellyskin lichen	USFS Survey and Manage	Moss-covered rock outcrops, rotten logs, or hardwoods at mid to high elevation, high canopy closure, especially riparian areas. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Phaeocollybia olivacea</i>	Olive phaeocollybia	USFS Sensitive	Grows in scatters or in arcs in mixed forests containing oak or pine trees. No populations are known from Trinity County, although suitable habitat is present in abundance. The closest known population is north of Trinity County, within Siskiyou County on the Klamath National Forest. Potentially occurs in the project area.
<i>Polyozellus multiplex</i>	Blue chanterelle	BLM Sensitive	Has an affinity for spruce and fir, so it is only likely to occur at high elevations. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Sowerbyella rhenana</i>	Stalked orange-peel fungus	USFS Sensitive	Grows in scattered to gregarious or low-growing groups in duff of moist, relatively undisturbed, older conifer forest. One population was found in 2000 on the South Fork Management Unit. Potentially occurs in the project area.

Scientific Name	Common Name	Status	Analysis
Plants			
<i>Allium jepsonii</i>	Jepson's onion	BLM Sensitive	This species is known mostly from Butte County in northern California. The single occurrence further south is on Table Mountain in Tuolumne County. Found in woodlands of broadleaved (especially oak) and coniferous trees, usually on slopes of serpentine or volcanic rock, from 984 to 1,968 ft. At the Tuolumne County site, the plants grow in full sun in the thin rocky soils atop a volcanic table. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Amsinckia lunaris</i>	Bent-flower fiddleneck	BLM Sensitive	This species is found on Inner North Coast Ranges, west-central Great Central Valley, and the San Francisco Bay Area at 165 to 1,650 ft elevation range. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Arctostaphylos klamathensis</i>	Klamath manzanita	BLM Sensitive	This species is found on rocky outcrops, slopes, subalpine forest from 5,220 to 6,560 ft in elevation, eastern Klamath Ranges, Scott Mountain Divide, Slate Mountain. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Arnica venosa</i>	Veiny arnica	Endemic	Mixed conifer or conifer/oak forest, especially on ridgetops and old roadcuts from 2,000 to 5,200 ft elevation. Trinity and Shasta Counties. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	BLM Sensitive	This species is found in open, grassy, or gravelly areas, meadows, commonly on serpentine substrates at elevations from 1,024 to 2,240 ft. Excluded from detailed analysis because the project area does not include suitable habitat.
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris's milk-vetch	BLM Sensitive	Although the California Natural Diversity Database lists nine occurrences as "presumed extant," despite repeated visits only two have been confirmed extant since 1996. The extant occurrences are at Saxon Station in Yolo County, in the Solano-Colusa Vernal Pool Region, and at the Gray Lodge Waterfowl Management Area in Butte County. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Balsamorhiza hookeri</i> var. <i>lanata</i>	Woolly balsamroot	BLM Sensitive	Rocky flats, grassy foothills and open pine or oak woodlands on volcanic or serpentine substrates from 1,900 to 5,000 ft in elevation. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	Big-scale balsamroot	BLM Sensitive	Meadows to rock outcrops and grasslands to conifer stands, as well as on serpentine soils from approximately 100 to 3,000 ft in elevation. Potentially occurring near the project area. However, not found during the 2006 Botanical Surveys.
<i>Balsamorhiza sericea</i>	Silky balsamroot	BLM Sensitive	This species is found at the eastern Klamath Ranges, Siskiyou, and Trinity Counties and also southwestern Oregon. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Botrychium minganense</i>	Mingan moonwort	USFS Sensitive/ Survey and Manage	Inhabits fields, shrubby slopes, shady forests, and old-growth western red cedar forests from 1,000 to 6,000 ft elevation. Excluded from detailed analysis because the project area does not contain any old-growth western red cedar forests.
<i>Botrychium montanum</i>	Mountain grapefern	USFS Sensitive/ Survey and Manage	Inhabits fields, shrubby slopes, shady forests, and riparian areas from 1,000 to 6,000 ft elevation. Excluded from detailed analysis because the species is only known from one site near the Butte and Tehama County border. Also, not found during the 2006 Botanical Surveys.
<i>Botrychium pinnatum</i>	Northwestern moonwort	USFS Sensitive/ Survey and Manage	Inhabits fields, shrubby slopes, shady forests, and riparian areas at approximately 2,000 ft elevation. Excluded from detailed analysis because five known occurrences in California (Mount Harkness, Grays Peak, Mccloud, Etna, and Davis Creek 7.5 minute quadrangles) are outside of the project area. Also, not found during the 2006 Botanical Surveys.
<i>Buxbaumia viridis</i>	Bug-on-a-stick (moss)	USFS Sensitive/ Survey and Manage	Large diameter, advanced decay logs in riparian habitat in conifer forest. Low elevation to alpine. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Calochortus greenei</i>	Greene's mariposa lily	BLM Sensitive	Foothills and low mountains on soils ranging from clay to light loam, which are generally stony and often associated with rock outcrops. Grasslands to coniferous forest at elevations of 2,400 to 6,400 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Calochortus longebarbatus</i> var. <i>longebarbatus</i>	Long-haired star-tulip	BLM Sensitive	This species is found in meadows and openings equally likely to occur in wetlands or nonwetlands between 3,937 and 6,233 ft. It is native to California and is also found outside of California, but is confined to western North America. Excluded from detailed analysis because the project area does not include suitable habitat.
<i>Calochortus monanthus</i>	Shasta River mariposa	BLM Sensitive	This species is found in the northeastern Klamath Ranges, near Yreka and Siskiyou Counties. It is found from $\pm$ 2,625 ft and has an affinity for vernal meadows. It is presumed extinct. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Calycadenia oppositifolia</i>	Butte County calycadenia	BLM Sensitive	Cascade Range Foothills and northern Sierra Nevada Foothills (Butte County). Open grassy flats and slopes (including roadcuts) in chaparral, foothill, woodland, and mix-conifer forest, on serpentine, granitic or volcanic substrates, at elevations of 800 to 2,800 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Calystegia atriplicifolia</i> ssp. <i>buttenesis</i>	Butte County morning-glory	BLM Sensitive	Eastern portions of Butte, Tehama, and Shasta Counties within the Cascade and Sierra Nevada Ranges. Dry, rocky places in open forest or chaparral, has been found in disturbed areas such as edges of roads, burned areas, plantations and fire breaks at 1,200 to 3,800 ft in elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Campanula shetleri</i>	Castle Crag harebell	BLM Sensitive	This species is found in the high Cascade Range of Shasta County. It is found at an elevation of 4,265 through 4,921 ft, typically in rock crevices. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Campanula wilkinsiana</i>	Wilkins' harebell	USFS Sensitive	Inhabits stream banks and springs in red fir and subalpine forests at 5,500 to 8,600 ft elevation. Excluded from detailed analysis because the project area is below the elevation range of this species.
<i>Carex livida</i>	Livid sedge	BLM Sensitive	This species was previously found on the north coast of California in Mendocino County. It was last seen in California in 1866; therefore, it is considered extirpated in California. Typical habitat includes bogs and swamps. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>	Pink cream sacs	BLM Sensitive	This species is native to California and is endemic (limited) to California alone at elevations between 0 and 2,952 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Chaenactis suffrutescens</i>	Shasta chaenactis	USFS Sensitive	Inhabits rocky open slopes and cobbly river terraces on ultramafic soils or glacial till with ultramafics included. Locations include eastern Klamath Ranges of California. Excluded from detailed analysis because there are no ultramafic soils in the project area.
<i>Chamaesyce ocellata</i> ssp. <i>rattanii</i>	Stony Creek spurge	BLM Sensitive	Found in Tehama County and is restricted to the westside of the valley. Dry streambeds, outcrops, dry gravelly and grassy slopes and flats, and roadsides, at elevations from 85 to 1,800 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	Dwarf soaproot	BLM Sensitive	Inner North Coast Ranges within Tehama County. Serpentine outcrops in oak woodlands, chaparral, and valley and foothill grasslands, from 800 to 3,000 ft in elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Clarkia biloba</i> ssp. <i>brandegeae</i>	Brandegge's clarkia	BLM Sensitive	This species occurs in foothill woodlands, often associated with roadcuts at elevations of 944 to 2,832 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Clarkia borealis</i> ssp. <i>arida</i>	Shasta clarkia	BLM Sensitive	Southern Cascade range, Shasta and Tehama Counties. Openings in foothill pine and black oak woodlands on southerly to westerly gentle slopes. Largest and most robust in very partial shade with little competing vegetation, at 1,600 to 1,800 ft in elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Clarkia borealis</i> ssp. <i>borealis</i>	Northern clarkia	USFS Sensitive	Foothill woodlands and forest margins between 1,300 and 2,600 ft. Eastern Trinity and W. Shasta Counties. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Clarkia gracilis</i> ssp. <i>albicaulis</i>	White-stemmed clarkia	BLM Sensitive	This species occurs in foothills and woodlands at elevations of 784 to 3,472 ft. Potentially occurs in the project area. However, not found during 2006 Botanical Surveys.
<i>Clarkia mildrediae</i> ssp. <i>mildrediae</i>	Mildred's clarkia	BLM Sensitive	This species is found in yellow pine forest between 804 and 5,611 ft, is native to California, and is endemic (limited) to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species
<i>Clarkia mosquinii</i>	Mosquin's clarkia	BLM Sensitive	This species is found in the northern Sierra Nevada Foothills, northeastern Butte County, at elevations of 610 to 1,640 ft. Dry, rocky places, natural openings and roadcut banks, within oak and conifer woodlands. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Cordylanthus tenuis</i> ssp. <i>pallidescens</i>	Pallid bird's beak	BLM Sensitive	This species is found in yellow pine forest between 0 and 3,937 ft. It is native to California and is endemic to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Cryptantha crinita</i>	Silky cryptantha	BLM Sensitive	Found at the north end of Sacramento Valley in Shasta and Tehama Counties. Sand and gravel deposits associated with seasonal and, less frequently, perennial streams. Generally below 1,000 ft elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Cypripedium fasciculatum</i>	Clustered lady's-slipper	USFS Sensitive/ Survey and Manage BLM Sensitive	Northern High Sierra Nevada, Cascade Ranges, Klamath Ranges, and North Coast Ranges. From dry to damp, rocky to loamy, and at elevations from 1,300 to 5,300 ft, areas of 60 to 100% shade and within various plant communities, including mixed evergreen, mixed conifer, Douglas-fir, pine and black oak forests. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Cypripedium montanum</i>	Mountain lady's-slipper	USFS Sensitive/ Survey and Manage BLM Sensitive	Central and Northern Sierra Nevada, Cascade Ranges, Klamath Ranges, and North Coast Ranges. Moist woods within the broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and North Coast coniferous forest having 60 to 80% canopy closure and at elevations from 1,500 to 6,500 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Draba carnosula</i>	Mt. Eddy draba	USFS Sensitive	Inhabits high elevation ridges and summits on rocky ultramafic soils at 6,000 to 9,000 ft elevation. Excluded from detailed analysis because there are no ultramafic soils in the project area, and the project area is below the elevation range of this species.
<i>Epilobium oreganum</i>	Oregon willowherb	USFS Sensitive BLM Sensitive	The Oregon Fireweed is found in yellow pine forest, red fir forest, lodgepole forest, subalpine forest, freshwater wetlands, and bogs/fens at elevations between 4,000 and 10,000 ft. It is native to California and is also found outside of California, but is confined to western North America and to Oregon. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	BLM Sensitive	Primarily found growing in dry, sandy soils derived from outcrops of shale, sandstones, conglomerates and volcanic substrates on gentle slopes of ridge tops, benches and along the toes of slopes in small areas containing little to no vegetation. Many times found in association with natural- and man-caused disturbances, such as windblown hill and ridge tops and deposits along slope toes and along trail and road edges. Found in pine forests or chaparral communities at elevations of 1,500 to 2,600 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Eriastrum tracyi</i>	Brandegee's woolly-stars	USFS Sensitive	Inhabits dry gravelly to loamy soils on flats and benches in closed cone pine forests or chaparral in the North Coast Ranges. Excluded from detailed analysis because the project area is out of the geographic range of this species.
<i>Ericameria ophitidis</i> (= <i>Haplopappus ophitidis</i>)	Serpentine goldenbush	Endemic	Inhabits serpentine semibarrens or openings in Jeffrey pine-incense cedar woodland at 2,600 to 5,600 ft elevation. Locations include Rattlesnake Creek Terrane (M261Au) and Chancelulla Peaks of the southern Klamath Ranges. Excluded from detailed analysis because there are no ultramafic soils in the project area.
<i>Eriogonum libertini</i>	Dubakella Mountain buckwheat	Endemic	Openings in Jeffrey pine-incense cedar woodland or chaparral at 2,500 to 5,500 ft elevation. Always on ultramafic soils. Locations include Rattlesnake Creek Terrane (M261Au) and Chancelulla Peaks of the southern Klamath Ranges. Excluded from detailed analysis because there are no ultramafic soils in the project area.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Eriogonum ursinum erubescens</i>	Blushing wild buckwheat	USFS Sensitive	Rocky openings on open ridgelines in the Klamath Range from 5,300 to 6,200 ft elevation. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Erythronium citrinum</i> var. <i>roderickii</i>	Scott Mountain fawn lily	USFS Sensitive BLM Sensitive	This lily species is found in montane forests on soils derived from serpentine or granitic parent material. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Eucephalis vialis</i>	Wayside aster	USFS Survey and Manage	Grassy, fire-disturbed openings, sometimes within conifer forest. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Frasera fastigiata</i>	Clustered green-gentian	USFS Sensitive	Inhabits cool, moist Douglas-fir/white fir forest margins or openings from 5,000 to 6,000 ft elevation. Locations include South Fork Mountain, Trinity County, and southwest Oregon. Excluded from detailed analysis because the project area is below the elevation range of this species.
<i>Fritillaria pluriflora</i>	Adobe lily	BLM Sensitive	This lily species is found in the adobe soil of interior foothills elevations ranging from 192 to 2,256 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Galium serpenticum</i> ssp. <i>scotticum</i>	Scott Mountain bedstraw	BLM Sensitive	Found in the Trinity Alps, Scott Mountains in the Klamath Mountain Ranges, as well as Trinity and Siskiyou Counties. Steep serpentine talus slopes in lower montane coniferous forest, at elevations between 3,200 and 7,000 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Harmonia doris-nilesiae</i>	Doris Nile's madia	USFS Sensitive BLM Sensitive	Rocky ultramafic ridgetops and slopes with Jeffrey pine, gray pine, and shrubs at 2,100 to 5,500 ft elevation. Endemic to California. Locations include Rattlesnake Creek Terrane of the southern Klamath Ranges. Excluded from detailed analysis because there are no ultramafic soils in the project area, and because the project area lies outside the known or expected range of this species.
<i>Harmonia stebbinsii</i>	Stebbins' madia	USFS Sensitive BLM Sensitive	Intersection of North Coast Ranges and Klamath Ranges at the junction of Tehama, Trinity, and Shasta Counties and southwestern Tehama County. Unique to shallow, rocky, soils rich in magnesium and iron, from 2,100 to 6,000 ft in elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Hesperolinon tehamense</i>	Tehama County western flax	BLM Sensitive	This species can be found on the west side of the Sacramento Valley in the foothills of the Inner Coast Ranges in Tehama County. Openings in mixed chaparral on serpentine soils at elevations from 328 to 3,280 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Horkelia hendersonii</i>	Henderson's horkelia	BLM Sensitive	This species is found in lodgepole forest and red fir forest and is native to California and to Oregon. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Iliamna bakeri</i>	Baker's globe mallow	USFS Sensitive	Chaparral, pine or mixed conifer/oak forest, juniper woodland. On rocky soil from 3,800 to 6,800 ft elevation. Locations include Scott Mountain, Cascades, and Modoc Plateau. Excluded from detailed analysis because the project area is below the elevation range of this species.
<i>Iliamna latibracteata</i>	California globe mallow	USFS Sensitive	Inhabits conifer forest and streambeds in the Klamath Range from 1,600 to 6,600 ft. Locations include South Fork Mountain. Excluded from detailed analysis because the project area is out of the geographic range of this species.
<i>Ivesia longibracteata</i>	Castle Crags ivesia	BLM Sensitive	This species is typically found in yellow pine forest. It is native to California and is endemic to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Ivesia pickeringii</i>	Pickering's ivesia	USFS Sensitive	Inhabits ephemeral drainages and seasonally wet grassy slopes in mixed conifer forest, on ultramafic soils at 2,500 to 4,500 ft elevation. Locations include Scott Mountain and Trinity Mountains. Excluded from detailed analysis because there are no ultramafics soils in the project area.
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	BLM Sensitive	Found in the upper Sacramento Valley on floor and lower foothill terraces from northern Butte, Tehama and southern Shasta Counties. At the edges of vernal pools and swales. Generally found between 300 and 1,000 ft but reaches 3,350 ft in the Goose Valley area. Often in small, sparsely vegetated habitats. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Layia septentrionalis</i>	Colusa layia	BLM Sensitive	This species is very uncommon. It is found in serpentine or sandy soils from 328 to 2,625 ft. On the inner north coast ranges of California near the Sacramento Valley and more specifically the Sutter Buttes. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Legenere limosa</i>	Legenere	BLM Sensitive	This species can be found in Tehama County on the east side of the Sacramento Valley, northeast of Red Bluff in grassland/oak woodlands. Growing in moist or wet ground, associated with vernal pools, vernal marshes, lakes, ponds and sloughs at elevations of 0 to 2,000 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Lewisia cantelovii</i>	Cantelow's lewisia	BLM Sensitive	This species is found in the steep canyons of northern Sierra Nevada rivers, especially in the Yuba and Feather River drainages. BLM manages habitat along the South Fork of the Yuba River. Broadleafed upland forest, chaparral, foothill woodland, often on granite cliff faces and rocky outcrops, 1,312 to 4,265 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Lewisia cotyledon</i> var. <i>heckneri</i>	Heckner's lewisia	BLM Sensitive	This species is found in northern Trinity County in the Klamath Ranges. Grows on outcrops and cliffs of various rock types, often near streams of rivers, in a variety of forest types, at elevations from 1,000 to 6,000 ft. Populations grow in part to full shade, usually on north slopes. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Limnanthes floccosa</i> ssp. <i>bellingiana</i>	Bellinger's meadowfoam	BLM Sensitive	This species is found from California, to the Oregon Cascade Range and its foothills in Shasta County California in high-elevation vernal pools (seasonal wetlands) and in rocky meadows with shallow soils that are at least partially shaded in the spring. Elevations range from 3,600 to 3,900 ft in Oregon, 950 to 3,600 ft in California. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Linanthus nuttallii</i> ssp. <i>howellii</i>	Howell's linanthus	USFS Sensitive BLM Sensitive	This species is found in yellow pine forest in wetlands in another region, but occurs almost always under natural conditions in nonwetlands in California. It is a native California species and is endemic to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Lotus rubriflorus</i>	Red-flowered lotus	BLM Sensitive	This species is found in valley grasslands, foothills, and woodland. It is native to California and is endemic to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Lupinus dalesiae</i>	Quincy lupine	BLM Sensitive	This species is found in lodgepole forest, red fir forest, and yellow pine forest disturbed habitat. It is native to California and is endemic to California alone. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Mielochheferia elongata</i>	Copper moss	USFS Sensitive	Exposed soil or rock containing copper minerals (in this area). Affinity for roadcuts at all elevations. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Mimulus evanescens</i>	Ephemeral monkeyflower	BLM Sensitive	This species occurs within sagebrush-juniper-dominated vegetation zones and rock fragments and along side small boulders. It is distributed widely along the northwestern edge of the Great Basin at elevations between 3,937 and 5,577 ft. It ranges from southwestern Idaho west through eastern Oregon and south into northeastern California. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Minuartia howellii</i>	Howell's sandwort	BLM Sensitive	This species is found in chaparral and yellow pine forest. It is native to California and to Oregon. It is unlikely that this species would be found in the project area. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Minuartia rosei</i>	Peanut sandwort	USFS Sensitive	Inhabits gravelly serpentine barrens and openings in Jeffrey pine/mixed conifer forest from 2,500 to 5,800 ft elevation. Locations include Rattlesnake Creek Terrane of the southern Klamath Ranges. Excluded from detailed analysis because there are no ultramafic soils in the project area.
<i>Minuartia stolonifera</i>	Scott Mountain sandwort	USFS Sensitive BLM Sensitive	Inhabits rocky slopes on ultramafic soils in montane mixed conifer forest from 4,100 to 5,300 ft elevation. Endemic to California. Locations include Scott Mountain. Excluded from detailed analysis because there are no ultramafic soils in the project area, and because the project area lies outside the known or expected range of this species.
<i>Monardella douglasii</i> var. <i>venosa</i>	Veiny monardella	BLM Sensitive	This species is found in valley grasslands and is native to California and is endemic to California alone. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Montia howellii</i>	Howell's montia	USFS Sensitive	Inhabits vernal, wet sites, often on compacted soil, below 1,500 ft elevation. Locations include Coastal and Klamath Mountains. Excluded from detailed analysis because the project area is above the elevation range of the species.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	BLM Sensitive	This species is found in yellow pine forest, northern oak woodlands, foothills valley grassland, freshwater wetland meadows, and vernal pools. It occurs almost always under natural conditions in wetlands and is native to California and is endemic to California alone. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Neviusia cliftonii</i>	Shasta snow-wreath	BLM Sensitive	This species is uncommon. It is found in shaded, north-facing, limestone slopes at elevations from 984 through 1,640 ft. In the Cascade Range near Lake Shasta. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Orthocarpus pachystachyus</i>	Shasta orthocarpus	BLM Sensitive	This species is found in meadows at elevations around 2,789 ft in the eastern Klamath Ranges, adjacent to the Cascade Range in central Siskiyou County. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Parnassia cirrata</i>	Fringed grass-of-parnassus	USFS Sensitive	Inhabits wet areas, lake edges, in ultramafic soils below 3,000 ft elevation. Locations include Klamath Ranges. Excluded from detailed analysis because there are no ultramafic soils in the project area.
<i>Paronychia ahartii</i>	Ahart's paronychia	BLM Sensitive	Found on the floor and foothill terraces of upper Sacramento Valley in southern Shasta, Tehama and northern Butte Counties. Occurs on rocky, sterile, clay-rich terraces soils; growing on the most stony microsites within its habitat, where the density of competing annual plants is low. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Penstemon filiformis</i>	Thread-leaved beardtongue	USFS Sensitive BLM Sensitive	Inhabits rocky openings in lower montane conifer forest on ultramafic soils from 2,000 to 6,000 ft elevation near the eastern Klamath Ranges in north Trinity and northwestern Shasta Counties. Excluded from detailed analysis because there are no ultramafic soils in the project area, and because the project area lies outside the known or expected range of this species..
<i>Penstemon personatus</i>	Closed-throated beardtongue	BLM Sensitive	This species is found in yellow-pine, montane forests in elevations ranging from 4,821 to 5,906 ft in the northern Sierra Nevadas, in Butte and Plumas Counties. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Pentemon tracyi</i>	Tracy's breadtongue	BLM Sensitive	Upper montane coniferous forests (rocky). Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Phacelia cookei</i>	Cooke's phacelia	BLM Sensitive	This species is found in open areas, volcanic, sandy soils, and scrub from 4,593 to 5,577 ft in elevation in the northern High Cascade Range near Mount Shasta. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Phacelia greenei</i>	Scott Valley phacelia	USFS Sensitive BLM Sensitive	Klamath Ranges, eastern Siskiyou County. Bare gravelly ultramafic ("serpentine") ridges and slopes in montane coniferous forest. Elevations from 5,000 to 7,000 ft. Excluded from detailed analysis because there are no ultramafic soils in the project area, and because the project area lies outside the known or expected range of this species.
<i>Phacelia leonis</i>	Siskiyou phacelia	BLM Sensitive	This species is found in Red Fir Forest and is native to California and Oregon. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Ptilidium californicum</i>	Pacific fuzzwort	USFS Sensitive/ Survey and Manage	Large-diameter Douglas-fir or white fir, 3,000 to 5,000 ft elevation. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Puccinellia howellii</i>	Howell's alkaligrass	USFS Sensitive BLM Sensitive	Inhabits permanently wet mineralized salt springs. Known from only one site in western Shasta County, at approximately 1,500 ft elevation. Excluded from detailed analysis because there are no mineral springs in the project area, and because the project area lies outside the known or expected range of this species.
<i>Raillardella pringlei</i>	Showy raillardella	USFS Sensitive BLM Sensitive	This species is found in meadows and bogs/fens and occurs almost always under natural conditions in wetlands native to California and is endemic to California alone. Excluded from detailed analysis because there are no ultramafic soils in the project area, and because the project area lies outside the known or expected range of this species.
<i>Raillardiopsis scabrida</i>	Rough raillardella	USFS Sensitive BLM Sensitive	Inhabits rocky, open subalpine slopes from 5,500 to 7,500 ft elevation. Locations include North Coast Ranges and southern Cascades. Excluded from detailed analysis because the project area is below the elevation range of this species.
<i>Rhynchospora californica</i>	California beaked-rush	BLM Sensitive	This species occurs in marshes, bogs, and seeps less than 3,281 ft in northwestern California, Sonoma County, and the Sierra Nevada Foothills, northern San Francisco Bay Area. Plants have not been documented in recent years. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Rorippa columbiae</i>	Columbia yellow cress	BLM Sensitive	This species is found in meadows and playas 3,937 to 5,906 ft in the Modoc Plateau in California to Washington. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Rupertia hallii</i>	Hall's rupertia	BLM Sensitive	Southern Cascade Ranges in southern Tehama and northern Butte Counties. Oak woodland to lower mountain coniferous forest, 2,900 to 4,500 ft, on gentle slopes and woodland openings, sometimes on disturbed sites such as roadsides and timber harvest areas. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	BLM Sensitive	Tehama County on the eastside of the Sacramento Valley, northeast of Red Bluff in grassland/oak woodlands. Occurs in shallow, standing, freshwater and sluggish waterways within the following: marshes, swamps, ponds, vernal pools lakes, reservoirs, sloughs, ditches, canals, streams, and rivers at elevations from 10 to 2,000 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Schistostegia pennata</i>	Goblin's gold	USFS Survey and Manage	Moist rootwads in shady coniferous forest. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Sedum albomarginatum</i>	Feather River stonecrop	BLM Sensitive	This species is found on steep serpentine slopes from 984 to 2,953 ft in the northern Sierra Nevada Foothills in Plumas County. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Plants (Cont.)			
<i>Sedum obtusatum</i> spp. <i>paradisum</i>	Canyon Creek stonecrop	USFS Sensitive BLM Sensitive	Southern Klamath Ranges in Shasta and Trinity Counties. Rock outcrops, gravel, and scree in mixed-conifer/canyon live oak forest or chaparral. Found on granitic, metamorphic, and sedimentary rock types. Elevation ranges from 960 to 6,200 ft. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Senecio eurycephalus</i> var. <i>lewisrosei</i>	Cut-leaved ragwort	BLM Sensitive	Serpentine substrate in chaparral, foothill woodland, and lower mixed-conifer forest from 900 to 3,200 ft elevation. Plant is found on both green serpentine rock and reddish weathered ultramafic soils. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Sidalcea robusta</i>	Butte County checkermallow	BLM Sensitive	This species is found in the foothills of the southern Cascade Ranges in Butte County. Partial shade in foothill woodland (often with a chaparral component intermixed) and blue oak savanna, on Tuscan Formation–derived soils at 300 to 1,200 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Silene salmonacea</i>	Klamath Mountain catchfly	BLM Sensitive	Lower montane coniferous forest/serpentine openings. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Smilax jamesii</i>	English Peak greenbriar	USFS Sensitive BLM Sensitive	Lakesides, stream banks, and alder thickets in montane coniferous forest generally from 4,921 to 8,202 ft in the Klamath Ranges and Cascade Range. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
<i>Tetraphis geniculata</i>	Tetraphis geniculata moss	USFS Survey and Manage	This species inhabits rotten stumps and logs, in shaded, humid locations at low to middle elevations. A closed canopy provides the best microclimate for optimal development of bryophyte species favoring decaying wood. Potentially occurs in project area. However, not found during the 2006 Botanical Surveys.
<i>Trifolium jokerstii</i>	Butte County golden clover	BLM Sensitive	Usually found in vernal swales, occasionally along edges of ephemeral stream banks and rarely along vernal pool edges within valley and foothill grassland and cismontane woodlands on volcanic substrates from 250 to 1,300 ft in elevation. Potentially occurs in the project area. However, not found during the 2006 Botanical Surveys.
Invertebrates			
<i>Ancotrema voyanum</i>	Hooded lancetooth	BLM Sensitive	All known locations either near a stream or in a draw (intermittent stream channel). The average elevation is 1,753 ft, and the known elevational range is 550 to 3,150 ft. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.

Scientific Name	Common Name	Status	Analysis
Invertebrates (Cont.)			
<i>Helminthoglypta hertleini</i>	Oregon shoulderband snail	BLM Sensitive	Usually found within 98 ft of rocky areas, talus deposits, and in associated riparian areas in the Klamath physiographic province and the southwestern Oregon Cascades. Areas of herbaceous vegetation in these rocky forested habitats are preferred habitat. In more mesic, forested habitats, especially in the Cascades, the species is associated with large woody debris and the typical rocky habitat is not required. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
<i>Helminthoglypta talmadgei</i>	Trinity shoulderband snail	BLM Sensitive	Trinity and Humboldt Counties, California. Also known in Klamath National Forest. Species has a patchy distribution in the Klamath Mountains of northern California. Most sites are along the Trinity River, from Junction City to the Klamath River, plus one site at Orleans on the Klamath River, one on the South Fork of the Trinity River, six in the mountains south of the Trinity River (Trinity County), and a cluster of sites on the South Fork of the Salmon River. This species is known or suspected in Big Bar, Hayfork, Weaverville (Trinity County), and Yolla Bolla (Trinity County) Ranger Districts of Trinity National Forest, Lower Trinity and Orleans (Humboldt County) Ranger Districts of Six Rivers National Forest, Salmon River and Ukonom Ranger Districts in Siskiyou National Forest, and Bureau of Land Management lands (Trinity County). Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
<i>Monadenia chaceana</i>	Siskiyou sideband snail	BLM Sensitive	Found in shrub steppe to pine oak woodland. Known from Trinity County. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
<i>Monadenia circumcarinata</i>	Keeled sideband snail	BLM Sensitive	Not known to occur outside the Tuolumne River canyon, where it is found in association with steep limestone outcrops and talus slopes. The California Academy of Sciences has records for eight specimens collected in Tuolumne and Stanislaus Counties. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
<i>Monadenia mormonum</i> <i>hirsuta</i>	Hairy Sierra sideband snail	BLM Sensitive	Found on the west side of Sierra Nevada, California; including Calaveras, Tuolumne, Mariposa, Fresno, Tehama, Placer, El Dorado, Sacramento, and Amador Counties. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.

Scientific Name	Common Name	Status	Analysis
Invertebrates (Cont.)			
<i>Trilobopsis tehamana</i>	Tehama chaparral	BLM Sensitive	An endemic species found in Tehama, Butte, and Siskiyou Counties, California. Usually associated with limestone rockslides, but has also been found under leaf litter and woody debris on the ground within 300 ft of limestone outcrops. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
<i>Vespericola pressleyi</i>	Pressley's Hersperian snail	BLM Sensitive	Found exclusively in Trinity County, California, within the boundaries of the Shasta-Trinity National Forest, up to 3,020 ft elevation. An apparently rare species that is only known from a small area in northern Trinity County, California. Potentially occurs in the project area. However, this species was not found during the 2006 Terrestrial Mollusk Surveys.
Amphibians			
<i>Hydromantes shastae</i>	Shasta salamander	BLM Sensitive	Currently known in the area north of the current Shasta Reservoir in northern California. Subsequently, they have been found in a number of sites in the vicinity of the Reservoir, east and west of the Sacramento River, and both north and south of the Pit River arm of the Reservoir. However, the total range of the species is < 35 km in greatest dimension. The species ranges between about 984 and 2,953 ft in elevation. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Rana boylei</i>	Foothill yellow-legged frog	BLM Sensitive	Frequents shallow, slow, gravelly streams and rivers with sunny banks, in forests, chaparral, woodlands. Sea level to 6,700 ft. CNDDDB records show recorded observation in proximity to the Project area. Potentially occurs in the project area.
<i>Scaphiopus hammondi</i>	Western spadefoot toad	BLM Sensitive	In California, the species was found throughout the Central Valley, and in the Coast Ranges and coastal lowlands from San Francisco Bay to Mexico. It has been extirpated from many locations within this range. The species is found mostly below 3,000 ft, but can occur up to 4,500 ft. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
Birds			
<i>Accipiter gentilis</i>	Northern goshawk	USFS Sensitive	Breeds from Alaska throughout most of Canada to New England, the northern Great Lakes region, and the Rockies, Cascades, and Sierra Nevada. Occupies various forest types, especially mature forest. CNDDDB record in proximity to project area. Potentially occurs in the project area.
<i>Empidonax trailii</i>	Willow flycatcher	USFS Sensitive	Breeds across southern Canada through the middle United States, sporadically distributed in the center of United States, with isolated populations in California. Breeds in moist, shrubby areas, often with standing or running water. Winters in shrubby clearings and early successional growth. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.

Scientific Name	Common Name	Status	Analysis
Birds (Cont.)			
<i>Empidonax trailii</i>	Willow flycatcher	USFS Sensitive	Breeds across southern Canada through the middle United States, sporadically distributed in the center of United States, with isolated populations in California. Breeds in moist, shrubby areas, often with standing or running water. Winters in shrubby clearings and early successional growth. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Falco peregrinus</i>	Peregrine falcon	USFS Sensitive	Breeds locally from Alaska to Greenland and southward to Mexico, Missouri, and northern Georgia. Found in a variety of habitats, most with cliffs for nesting and open areas for foraging. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
Mammals			
<i>Antrozous pallidus</i>	Pallid bat	BLM Sensitive	Throughout its range, the bat is found in low elevation (<6,000 ft) hot, dry habitats, especially those characterized by rocky outcrops, canyon landscapes, shrub-steppe grasslands, and rugged terrain. In southern parts of its range, it also inhabits oak savannah woodland, higher elevation (up to 8,000 ft) evergreen and mixed conifer woodland and intermontane valleys. It is most abundant in xeric ecosystems, including the Great Basin, Chihuahuan Mojave, and Sonoran Deserts. Pallid bats roost alone, in small groups (2 to 20 bats), or gregariously (100s of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, cracks in basalt boulders, caves, mines, trees (e.g., in basal hollows or bole cavities, under exfoliating bark, on branches among foliage, or in snags), mud tubes in badland formations, and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Not likely to roost in the project area due to lack of suitable habitat, but may forage over a variety of habitats.

Scientific Name	Common Name	Status	Analysis
Mammals (Cont.)			
<i>Corynorhinus townsendi</i>	Townsend's big-eared bat	BLM Sensitive	Historic and current records for this bat species in California indicate that it occurs in a wide variety of habitats (from desert scrub to chaparral, oak woodland, and conifer forest) and in several life zones (particularly Lower and Upper Sonoran and Transition). The primary centers of distribution for the bat in California in the past 30 to 70 years are found in areas that offer caves or cave analogues (such as old mine workings). Thus populations have been concentrated in the limestone formations of the Sierra Nevada and Trinity mountain ranges, the volcanic formations in the northern part of the state, and a number of mining districts (most significantly those in the desert regions east and southeast of the Sierra Nevada, the Mother Lode country, and the inner coast range north of San Francisco). The majority of the extant bat colonies are still found in cave and mining districts. Not likely to roost in the project area due to lack of suitable habitat, but may forage over a variety of habitats.
<i>Eumops perotis californicus</i>	Greater western mastiff-bat	BLM Sensitive	This bat species is found from California (San Francisco across to the Sierra Nevada and south) through Las Vegas, Nevada southern half of Arizona to the Big Bend, Texas, area and south to Sinaloa in northwestern Mexico and the Zacatecas in central Mexico. It prefers rugged rocky canyons with abundant crevices and crowds into tight crevices a foot or more deep and 2 in. or more wide. Colonies prefer crevices even deeper, to 10 or more ft. Not likely to roost in project area due to lack of suitable habitat, but may forage over a variety of habitats.
<i>Lepus americanus klamathensis</i>	Oregon snowshoe hare	BLM Sensitive	This hare species is primarily found in riparian areas with thickets of deciduous trees such as alders and willows and in dense thickets of young conifers, particularly firs; found mainly above the Yellow Pine zone, in Canadian and Hudsonian associations. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Martes americana</i>	American marten	USFS Sensitive	Occupies mature, dense conifer forests or mixed conifer-hardwood forests with woody debris on the forest floor. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Martes pennanti pacificus</i>	Pacific fisher	USFS Sensitive	Occupies large areas of primarily coniferous forests with fairly dense canopies and large trees, snags, and down logs. Currently, only three small, isolated populations remain, including native populations in northwestern California and the southern Sierra Nevada and a reintroduced population in the southern Oregon Cascades. Two pacific fishers were identified during the 2006 Northern Spotted Owl Surveys. Potentially occurs in the project area.

Scientific Name	Common Name	Status	Analysis
Mammals (Cont.)			
<i>Myotis ciliolabrum</i>	Small-footed myotis	BLM Sensitive	The small-footed myotis is a common bat of arid uplands in the Upper sonoran and Transition life zones of California. It occurs along the southern half of the California coast and the west and east sides of the Sierra Nevada to about 8,900 ft. They seem to prefer open stands in forests, woodlands and brushy habitats. These bats hibernate in suitable caves or mine tunnels within the range occupied in summer. Bats observed in winter are often found wedged deeply into narrow cracks and crevices in the rock ceilings of old mines. When probed from these crevices they are able to fly, which indicates that they do not go into a deep winter sleep. Excluded from detailed analysis because the project area lies outside the known or expected range of this species.
<i>Myotis evotis</i>	Long-eared myotis	BLM Sensitive	The long-eared myotis is found throughout California except in the hot central valley and the dry hot deserts of southern and southeastern California. It feeds over water, among trees and shrubs within 4 ft of the ground and catches insects while in flight, feeding from the ground, or gleaning from foliage. This bat is capable of hovering and feeds on the edges of habitat or over water. Emerges late in the evening to forage. This bat can be found in brush, woodland, and forests habitats up to 9,000 ft, possibly preferring coniferous woodlands and forests, yet is uncommon in most of its range. Not likely to roost in the project area due to lack of suitable habitat, but may forage over a variety of habitats.
<i>Myotis thysanodes</i>	Fringed myotis	BLM Sensitive	This species is most abundant in desert scrubland, grassland, xeric woodland, sage-grass steppe, mesic old-growth forest, and multi-aged subalpine coniferous and mixed-deciduous forests. Xeric woodlands consisting of oak and pinyon-juniper appear to be the most commonly used. The fringed bat is a colonial-roosting species with colonies ranging anywhere from 10 to 2,000 individuals, although large colonies are quite rare. Where available, caves, buildings, underground mines, rock crevices in cliff faces and bridges are used for maternity and night roosts, while hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California. Not likely to roost in the project area due to lack of suitable habitat, but may forage over a variety of habitats.

Scientific Name	Common Name	Status	Analysis
Mammals (Cont.)			
<i>Myotis yumanensis</i>	Yuma myotis		The Yuma myotis bat occurs along the western quarter of North America from Canada, south to Mexico, and eastward to Idaho and Texas, including parts of Montana, Utah, and Colorado. This bat is common in California and found throughout the state except in the Mojave and Colorado deserts of south eastern California. Found in open forests and woodlands usually feeding over water. Emerges soon after sunset and feeds on a variety of flying insects low to the ground. Roosts in buildings, mines, caves, or crevices. In summer, females form maternity colonies that may include thousands of individuals. Maternity colonies are found in buildings, under bridges, and in mines and caves. Males live relatively solitary lives, roosting in buildings or other suitable roosts. Bats leave the nursery roosts in the fall, although their winter habitat is unknown. Not likely to roost in the project area due to lack of suitable habitat, but may forage over a variety of habitats.

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APPENDIX D

HERBICIDES

D.1 GENERAL HERBICIDE BEST MANAGEMENT PRACTICES

- Review Federal and California State pesticide regulations for restrictions on use of particular herbicides.
- Review landowner/interagency agreements for herbicide type or application method restrictions.
- Observe site conditions to match specific herbicides and application methods to those conditions, which should encompass:
 - Plants that are to be controlled,
 - Season of the year and associated limitations,
 - Presence of sensitive environmental areas (such as endangered species, habitat, and wetlands),
 - Presence/proximity of nontarget vegetation, and
 - Vegetation conditions (such as height and amount of tall-growing brush).
- Review Western's environmental protection requirements.
- Follow all restrictions and guidance listed on the herbicide label.
- Calibrate equipment to ensure that the proper mixtures and volumes of herbicides are applied.
- Select the proper nozzle tip to avoid overspray.
- Handle herbicides in a manner that avoids accidental spills and ensures worker and public safety.
- Follow all herbicide spill requirements in the rare case of an herbicide spill, including containment and cleanup procedures.
- Adjust herbicide application methods on the basis of wind speed and direction, which may include avoiding application on windy days when the potential for drifting is greatest.
- Use herbicide-thickening agents (as appropriate), follow label instructions, and consider weather restrictions to reduce the drift hazard to nontarget plants.

- Visit ROWs after treatments to determine whether target vegetation was controlled and whether nontarget plants were affected. Note any unexpected results, and change procedures as needed to achieve better results during future treatments.
- Protect drinking water sources by following all buffer zone restrictions.
- Ensure that treated areas are posted and re-entry intervals are specified and enforced in accordance with label instructions anywhere that herbicides are being used.
- Use only herbicides that are virtually nontoxic to animals in areas that get heavy public use.
- In treated areas, post any restrictions on contacting treated vegetation and ensure that they are clearly stated.
- Ensure that all persons who apply herbicides have received training and are licensed in appropriate application categories.
- Follow all herbicide label and material safety data sheet (MSDS) instructions regarding mixing and application standards to reduce the potential for exposing the public as a result of drifting or misapplication.
- Comply with herbicide-free buffer zones, if any, as per label instructions if herbicides are being used near crops for consumption.
- Never leave herbicides or equipment unattended in unrestricted access areas.
- Closely follow all required equipment-cleaning standards as indicated on the herbicide label.
- In the event of a spill, immediately notify those who could potentially be affected.

D.2 HERBICIDES APPROVED FOR USE BY WESTERN AND CURRENTLY REGISTERED FOR USE IN CALIFORNIA

Table D-1 lists herbicides and common trade names for formulations. Note that herbicides are typically mixed with surfactants, adjuvants, drift-control agents, deposition-retention agents, dyes, etc., to aid application and herbicide effectiveness. The table is followed by information from the MSDSs for the herbicides.

Table D-1 Approved and Registered Herbicides

Herbicide	Trade Name ^a	EPA Registration Number	Manufacturer(s)	Typical Use(s)
Bromacil and Diuron	Krovar® I DF	352-505	DuPont	Substations
Chlorsulfuron	Telar® DF	352-522	DuPont	ROW
Chlorsulfuron and Sulfometuron Methyl	Landmark MP® ^c	352-621	DuPont	ROW
Clopyralid	Transline®	62719-73	Dow AgroSciences	Noxious weed control
2,4-D	Weedar 64®	71368-1	Nufarm	Substations, ROW
Diglycolamine salt of Dicamba	Vanquish®	100-884	Novartis	ROW (stump treatment), substations
Diuron	Karmex DF®	1812-362	Griffin	Substations
	Direx 4L®	1812-257	Griffin	Substations, ROW
Fluroxypyr	Vista®	62719-308	Dow AgroSciences	ROW, substations, esp. for <i>Kochia</i>
Glyphosate	Accord® Concentrate	62719-324	Dow AgroSciences	Substations, ROW
	Roundup®	524-445	Monsanto	Substations
	Roundup PRO®	524-475	Monsanto	Substations
	Rodeo®	62719-324	Dow AgroSciences	Substations
Imazapyr	Arsenal®	241-299	BASF	Substations, ROW
	Imazapyr EZJECT®	61202-1	Odom	Stump injection
	Stalker®	241-398	BASF	Stump treatment
Mefluidide	Embark 2S® (plant growth regulator)	2217-759	PBI/Gordon	Buffers, around substations (on grass)
Oryzalin	Oryzalin Pro 4®	72167-15-74477	Vegetation Management	Substations, ROW
	Surflan A.S.®	62719-113	Dow AgroSciences	Substations
Oxyfluorfen	Goal® 2XL	62719-424	Dow AgroSciences	ROW
Paclobutrazol	Profile 2SC® (tree growth regulator)	62719-234	Dow AgroSciences	ROW (sensitive areas), substations (screens)
Pendimethalin	Pendulum WDG®	241-340	BASF	Substations
Sulfometuron Methyl	Oust®	352-401	DuPont	Storage yards, substations, ROW
	Landmark MP® ^b	352-621	DuPont	Storage yards, substations, ROW
Triclopyr	Garlon 3A®	62719-37	Dow AgroSciences	ROW
	Garlon 4®	62719-40	Dow AgroSciences	ROW
	Pathfinder II®	62719-176	Dow AgroSciences	Stump treatment
Trifluralin	Biobarrier®	59823-1	Reemay	Substations, yards
	Biobarrier II®	59823-3	Reemay	Substations, yards

^a Note that trade names are current common formulations using the listed herbicide as an active ingredient. Western may employ different formulations of the listed herbicide that develop with improvements in herbicide technology.

^b Uses mix of two herbicides.

Sources: California Department of Pesticide Regulation, 2007, Home Page, Accessed July 2007. Available at <http://www.cdpr.ca.gov/index.htm>. Western Area Power Administration, 2007, *Integrated Vegetation Management Environmental Guidance Manual*, January.

D.2.1 Krovar I DF

Common or Chemical Name(s): Bromacil and Diuron

Manufacturer(s): DuPont

EPA Registration Number(s): 352-505

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Bromacil: (5-Bromo-3-Sec-Butyl-6-Methyluracil)
Diuron: (3-(3,4-Dichlorophenyl) -1,1-Dimethylurea)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Oral Toxicity: *LD50 (honey bee) > 1 microgram (µg)/bee*

Acute Contact Toxicity: *LD50 (honey bee 48-hour) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget brush/woody plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 36 milligrams per liter (mg/L)*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 127 mg/L*

OVERALL TOXICITY: *slightly toxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *EC50 (Daphnia magna 48-hour) 121 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (Eastern oyster larvae 48-hour) 130 mg/L*

Acute Toxicity: *LC50 (mysid 48-hour) 12.9 mg/L*

Acute Toxicity: *LC50 (sheepshead minnow 48-hour) 1,620 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 2,250 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 10,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 10,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) 2,500 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

Low potential

Toxic Inert Ingredients Listed on MSDS: None

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.2 Telar DF

Common or Chemical Name(s): Chlorsulfuron

Manufacturer(s): DuPont

EPA Registration Number(s): 352-522

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Chlorsulfuron (2-Chloro-N-[[4-Methoxy-6-Methyl-1,3,5-Triazin-2-Yl)Amino]Carbonyl]Benzenesulfonamide)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 250 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 300 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 370.9 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (Eastern oyster larvae 48-hour) 385 mg/L*

Acute Toxicity: *LC50 (sheepshead minnow 96-hour) > 980 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 5,000 mg/kg*

Avian Acute Oral Toxicity: *LD50 (mallard duck) > 5,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,620 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

No potential

Toxic Inert Ingredients Listed on MSDS: None

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): Syl-Tac

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.3 Landmark MP

Common or Chemical Name(s): Chlorsulfuron, Sulfometuron Methyl

Manufacturer(s): DuPont

EPA Registration Number(s): 352-621

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Chlorsulfuron (2-Chloro-N-[[4-Methoxy-6-Methyl-1,3,5-Triazin-2-Yl)Amino]Carbonyl]Benzenesulfonamide) (25%)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 250 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 300 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 370.9 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (Eastern oyster larvae 48-hour) 385 mg/L*

Acute Toxicity: *LC50 (sheepshead minnow 96-hour) > 980 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 5,000 mg/kg*

Avian Acute Oral Toxicity: *LD50 (mallard duck) > 5,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,620 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

No potential

Toxic Inert Ingredients Listed on MSDS: None

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): Syl-Tac

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.3 Landmark MP (Cont.)

Chemical Name: Sulfometuron Methyl

Toxic Active Ingredients Listed on MSDS: Sulfometuron methyl: (methyl 2-(4,6-dimethyl-2-pyrimidinyl)-mino]carbonyl]amino]sulfonyl]benzoate) (50%)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 11 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 148 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 150 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) > 150 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (Eastern oyster larvae 48-hour)*

Acute Toxicity: *LC50 (sheepshead minnow 96-hour) > 45 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 5,000 mg/kg*

Avian Acute Oral Toxicity: *LD50 (mallard duck) > 5,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,620 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

No potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.4 Transline

Common or Chemical Name(s): Clopyralid

Manufacturer(s): Dow AgroSciences

EPA Registration Number(s): 62719-73

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Clopyralid: (3,6-Dichloro-2-pyridinecarboxylic acid, Monoethanolamine salt)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 100 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 100 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) > 100 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (fiddler crab 96-hour) —no information*

Acute Toxicity: *LC50 (grass shrimp 96-hour) —no information*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) < 2,000 mg/kg*

Avian Acute Oral Toxicity: *LD50 (mallard duck) < 2,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) < 5,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) < 5,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*

OVERALL TOXICITY: *slightly toxic*

Bioaccumulation Potential

Little or no potential

Toxic Inert Ingredients Listed on MSDS:

Isopropyl alcohol

Polyglycol 26-2

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): Syl-Tac

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.5 Weedar 64

Common or Chemical Name(s): 2,4-D

Manufacturer(s): Nufarm

EPA Registration Number(s): 71368-1

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: 2,4-Dichlorophenoxyacetic acid (2,4-D)

Dimethylamine (DMA)

Diethanolamine

Ethylene glycol

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg /bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 1.1 to > 240 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 0.9 to > 524 mg/L*

OVERALL TOXICITY: *highly toxic to practically nontoxic (depending on formulation)*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 5.8 to > 184 mg/L*

OVERALL TOXICITY: *moderately toxic to practically nontoxic (depending on formulation)*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (Dungeness crab 96-hour) > 10.0 mg/L*

Acute Toxicity: *LC50 (brown shrimp 96-hour) > 2.0 mg/L*

OVERALL TOXICITY: *moderately toxic to slightly toxic (depending on formulation)*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (various birds) 472 to > 2,000 (mg/kg)*

Avian Subacute Dietary Toxicity: *LC50 (various birds) > 1,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (various mammals) > 100 to > 5,000 mg/kg*

OVERALL TOXICITY: *moderately toxic to practically nontoxic (depending on formulation)*

Bioaccumulation Potential

Low potential

D.2.5 Weedar 64 (Cont.)

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.6 Vanquish

Common or Chemical Name(s): Diglycolamine salt of Dicamba

Manufacturer(s): Novartis

EPA Registration Number(s): 100-884

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Dicamba (56.8%)

Chemical Name: 3,6-Dichloro-o-Anisic Acid

Chemical Class: Substituted Benzoic Acid Herbicide

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 100 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 135 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 110 mg/L*

OVERALL TOXICITY: *slightly toxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (fiddler crab 96-hour) > 180 mg/L*

Acute Toxicity: *LC50 (grass shrimp 96-hour) > 100 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (mallard duck) > 2,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 10,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 10,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 500 mg/kg*

OVERALL TOXICITY: *slightly toxic*

Bioaccumulation Potential

Slight potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.7 Karmex DF and Direx 4L

Common or Chemical Name(s): Diuron

Manufacturer(s): Griffin

EPA Registration Number(s):

Karmex DF	1812-362
Direx 4L	1812-257

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Diuron: (3-(3,4-Dichlorophenyl)-1,1-Dimethylurea)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*
 OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 190 mg/L*
 Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 300 mg/L*
 OVERALL TOXICITY: *moderately toxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 1.0 mg/L*
 OVERALL TOXICITY: *highly toxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (sheepshead minnow 96-hour)*
 Acute Toxicity: *LC50 (grass shrimp 96-hour)*
 Acute Toxicity: *LC50 (Eastern oyster 96-hour)*
 OVERALL TOXICITY: *moderately toxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 2,000 mg/kg*
 Avian Acute Oral Toxicity: *LD50 (mallard duck) > 2,000 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 1,730 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 1,730 mg/kg*
 Mammal Acute Oral Toxicity: *LD50 (rat) 2,800 mg/kg*
 OVERALL TOXICITY: *slightly toxic*

Bioaccumulation Potential

Slight potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.8 Vista

Common or Chemical Name(s): Fluroxypyr

Manufacturer(s): Dow AgroSciences

EPA Registration Number(s): 62719-308

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Fluroxypyr: 1-Methylheptyl Ester 26.2%

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *no information*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *no information*

Acute Toxicity: *no information*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) > 100 mg/L*

OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *no information*

Acute Toxicity: *no information*

Acute Toxicity: *no information*

OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 2,250 mg/kg*

Avian Acute Oral Toxicity: *no information*

Avian Subacute Dietary Toxicity: *no information*

Avian Subacute Dietary Toxicity: *no information*

Mammal Acute Oral Toxicity: *LD50 (rat) > 3,738 mg/kg*

OVERALL TOXICITY: *moderately toxic*

Bioaccumulation Potential

Moderate potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.9 Accord Concentrate, Roundup, Roundup PRO, and Rodeo

Common or Chemical Name(s): Glyphosate

Manufacturer(s): Dow AgroSciences (Accord Concentrate, Rodeo), Monsanto (Roundup, Roundup PRO)

EPA Registration Number(s):

Accord Concentrate	62719-324
Roundup	524-445
Roundup PRO	524-475
Rodeo	62719-324

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate
☐ Wettable Powder ☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Isopropylamine salt of N-(phosphonomethyl)glycine: Isopropylamine salt of glyphosate

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

For Glyphosate formulations labeled for terrestrial uses

Microorganisms

Acute Contact Toxicity: **LD50 (honey bee contact) > 100 µg/bee**

OVERALL TOXICITY: **practically nontoxic**

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: **LC50 (rainbow trout 96-hour) 8.2 mg/L**

Acute Toxicity: **LC50 (bluegill sunfish 96-hour) 5.8 mg/L**

Acute Toxicity: **LC50 (chinook salmon 96-hour) 20 mg/L**

Acute Toxicity: **LC50 (coho salmon 96-hour) 22 mg/L**

OVERALL TOXICITY: **moderately toxic**

Aquatic Freshwater Invertebrates

Acute Toxicity: **EC50 (Daphnia magna 48-hour) 12.9 mg/L**

OVERALL TOXICITY: **slightly toxic**

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: **LC50 (fiddler crab 96-hour) 934 mg/L**

Acute Toxicity: **LC50 (grass shrimp 96-hour) 281 mg/L**

OVERALL TOXICITY: **practically nontoxic**

Terrestrial Animals

Avian Acute Oral Toxicity: **LD50 (bobwhite quail) > 2,000 mg/kg**

Avian Acute Oral Toxicity: **LD50 (mallard duck) > 2,251 mg/kg**

Avian Subacute Dietary Toxicity: **LC50 (bobwhite quail) > 5,620 mg/kg**

Avian Subacute Dietary Toxicity: **LC50 (mallard duck) > 5,620 mg/kg**

Mammal Acute Oral Toxicity: **LD50 (goat) > 5,000 mg/kg**

OVERALL TOXICITY: **practically nontoxic**

D.2.9 Accord Concentrate, Roundup, Roundup PRO, and Rodeo (Cont.)

Bioaccumulation Potential

Little or no potential for Glyphosate formulations labeled for aquatic/terrestrial uses

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.10 Arsenal, Imazapyr EZJECT, and Stalker

Common or Chemical Name(s): Imazapyr

Manufacturer(s): BASF (Arsenal, Stalker), Odom (EZJECT)

EPA Registration Number(s):

Arsenal	241-299
Imazapyr EZJECT	61202-1
Stalker	241-398

Formulation: ☐ Granule ☒ Liquid (Arsenal) ☒ Emulsifiable Concentrate (Stalker)
☐ Wettable Powder ☒ Other (specify): Capsule Solid (Imazapyr EZJECT)

Toxicity Information

Toxic Active Ingredients Listed on MSDS: 2-(4-isopropyl-4-methyl-5-oxo-2imidazoli-2-yl) nicotinic acid, salt with isopropylamine (1:1)
 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-oxo-1H-imidazol-2-yl)-3pyridinecarboxylic acid, salt with 2-propanamine (1:1)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*
 OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 100 mg/L*
 Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 100 mg/L*
 OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) > 100 mg/L*
 OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (sheepshead minnow 96-hour)*
 Acute Toxicity: *LC50 (grass shrimp 96-hour)*
 Acute Toxicity: *LC50 (eastern oyster 96-hour)*
 OVERALL TOXICITY: *practically nontoxic (on the basis of freshwater data, Imazapyr is not expected to be toxic to estuarine invertebrates)*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 2,150 mg/kg*
 Avian Acute Oral Toxicity: *LD50 (mallard duck) > 2,150 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,000 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*
 Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*
 OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

Little potential

D.2.10 Arsenal, Imazapyr EZJECT, and Stalker (Cont.)

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): Hasten

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.11 Embark 2S

Common or Chemical Name(s): Mefluidide

Manufacturer(s): PBI/Gordon

EPA Registration Number(s): 2217-759

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS: Flurprimidol: alpha-(1-Methyl ethyl)-alpha-(4-trifluoromethoxy)phenyl)-5-pyrimidine-methanol

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact may injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) < 100 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) < 100 mg/L*

OVERALL TOXICITY: *slightly toxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) — no information*

OVERALL TOXICITY: *not available*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (Eastern oyster larvae 48-hour) — no information*

Acute Toxicity: *LC50 (sheepshead minnow 96-hour) no information*

OVERALL TOXICITY: *not available*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (mallard duck) > 4,640 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 10,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 10,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) > 4,000 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

No potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.12 Oryzalin Pro 4 and Surflan A.S.

Common or Chemical Name(s): Oryzalin

Manufacturer(s): Vegetation Management (Oryzalin Pro 4), Dow AgroSciences (Surflan A.S.)

EPA Registration Number(s):

Oryzalin Pro 4	72167-15-74477
Surflan A.S.	62719-113

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Oryzalin: 3,5-Dinitro-N4,N4-dipropyl-sulfanilamide

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee) > 11 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 3.26 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 2.88 mg/L*

OVERALL TOXICITY: *moderately toxic*

Aquatic Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 1.4 mg/L*

OVERALL TOXICITY: *moderately toxic*

Aquatic Estuarine/Marine Invertebrates

Studies not required by the EPA. The EPA calculates that the toxicity will be similar to calculations for freshwater invertebrates.

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) 1,046 mg/kg*

Avian Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Small Mammal Acute Oral Toxicity: *LD50 > 10,000 mg/kg*

OVERALL TOXICITY: *slightly to practically nontoxic*

Bioaccumulation Potential

Low potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.13 Goal 2XL

Common or Chemical Name(s): Oxyfluorfen

Manufacturer(s): Dow AgroSciences

EPA Registration Number(s): 62719-424

Formulation: ☐ Granule ☐ Liquid ☒ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Oxyfluorfen: 2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *N/A*

OVERALL TOXICITY: *N/A*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 0.41 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 0.2 mg/L*

OVERALL TOXICITY: *very highly toxic*

Aquatic Invertebrates

Acute Toxicity: *LC50 (Diatom 48-hour) 0.031 mg/L*

OVERALL TOXICITY: *very highly toxic*

Aquatic Estuarine/Marine Invertebrates

Studies not required by the EPA. The EPA calculates that the toxicity will be similar to calculations for freshwater invertebrates.

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 2,000 mg/kg*

Avian Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Small Mammal Acute Oral Toxicity: *N/A*

OVERALL TOXICITY: *slightly to practically nontoxic*

Bioaccumulation Potential

Moderate potential

Toxic Inert Ingredients Listed on MSDS: *N/A*

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): *N/A*

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): *N/A*

Toxicity Information on Adjuvants (Lethal/Sublethal): *N/A*

D.2.14 Profile 2SC (Tree Growth Regulator)

Common or Chemical Name(s): Paclobutrazol

Manufacturer(s): Dow AgroSciences

EPA Registration Number(s): 62719-234

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Paclobutrazol: (4-chlorophenyl)methyl-1,1-dimethylethyl-1H-1,2,4-triazole-1-ethanol

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) >100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will slow the growth of target and nontarget trees.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 27.8 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 23.6 mg/L*

OVERALL TOXICITY: *slightly toxic*

Aquatic Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 33.2 mg/L*

OVERALL TOXICITY: *slightly toxic*

Aquatic Estuarine/Marine Invertebrates

Studies not required by the EPA. The EPA calculates that the toxicity will be similar to calculations for freshwater invertebrates.

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (mallard duck) 7,913 mg/kg*

Avian Dietary Toxicity: *LC50 (mallard duck) > 20,000 mg/kg*

Avian Dietary Toxicity: *LC50 (bobwhite quail) > 5,000 mg/kg*

Small Mammal Acute Oral Toxicity: *LD50 > 2,140 mg/kg*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

Low potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.15 Pendulum WDG

Common or Chemical Name(s): Pendimethalin

Manufacturer(s): BASF

EPA Registration Number(s): 241-340

Formulation: ☒ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzeneamine

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (no information available)*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 0.199 mg/L*

OVERALL TOXICITY: *highly toxic (depending on formulation)*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 0.28 mg/L*

OVERALL TOXICITY: *highly toxic (depending on formulation)*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *LC50 (Dungeness crab 96-hour) > 10.0 mg/L*

Acute Toxicity: *LC50 (brown shrimp 96-hour) > 2.0 mg/L*

OVERALL TOXICITY: *slightly toxic (depending on formulation)*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (various birds) > 2,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 3,149 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rats) > 5,000 mg/kg*

OVERALL TOXICITY: *moderately toxic to practically nontoxic (depending on formulation)*

Bioaccumulation Potential

Low potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.16 Oust

Common or Chemical Name(s): Sulfometuron Methyl

Manufacturer(s): DuPont

EPA Registration Number(s): 352-401

Formulation: ☐ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☒ Other (specify): solid, dry, flowable

Toxicity Information

Toxic Active Ingredients Listed on MSDS: sulfometuron methyl: (methyl 2-(4,6-dimethyl-2-pyrimidinyl)-mino]carbonyl]amino]sulfonyl]benzoate) (75%)

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 11 µg/bee*
 OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) > 148 mg/L*
 Acute Toxicity: *LC50 (bluegill sunfish 96-hour) > 150 mg/L*
 OVERALL TOXICITY: *practically nontoxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) > 150 mg/L*
 OVERALL TOXICITY: *practically nontoxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (Eastern oyster larvae 48-hour)*
 Acute Toxicity: *LC50 (sheepshead minnow 96-hour) > 45 mg/L*
 OVERALL TOXICITY: *practically nontoxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) > 5,000 mg/kg*
 Avian Acute Oral Toxicity: *LD50 (mallard duck) > 5,000 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,620 mg/kg*
 Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*
 Mammal Acute Oral Toxicity: *LD50 (rat) > 5,000 mg/kg*
 OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

No potential

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.17 Garlon 3A, Garlon 4, and Pathfinder II

Common or Chemical Name(s): Triclopyr

Manufacturer(s): Dow AgroSciences

EPA Registration Number(s):

Garlon 3A	62719-37
Garlon 4	62719-40
Pathfinder II	62719-176

Formulation: ☐ Granule ☒ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder
☐ Other (specify):

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Triclopyr ((3,5,6-trichloro 2-pyridinyl)oxy) acetic acid, triethylamine salt (44.4%) — Garlon 3A

Triclopyr ((3,5,6-trichloro-2-pyridinyl)oxy) acetic acid, butoxy ethyl ester (61.6%) — Garlon 4

Triclopyr ((3,5,6-trichloro-2-pyridinyl)oxy) acetic acid, butoxy ethyl ester (13.6%) — Pathfinder II

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *LD50 (honey bee contact) > 100 µg/bee*

OVERALL TOXICITY: *practically nontoxic*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (rainbow trout 96-hour) 0.08-4.9 mg/L*

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 2.1 mg/L*

Acute Toxicity: *LC50 (coho salmon 96-hour) 0.45 mg/L*

OVERALL TOXICITY: *highly toxic*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (Daphnia magna 48-hour) 2.2 mg/L*

OVERALL TOXICITY: *moderately toxic*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *EC50 (grass shrimp 96-hour) 1.7 mg/L*

Acute Toxicity: *EC50 (eastern oyster 96-hour) 56-87 mg/L*

Acute Toxicity: *EC50 (tidewater silverside 96-hour) 0.45 mg/L*

OVERALL TOXICITY: *highly toxic*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (bobwhite quail) 8,490 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (bobwhite quail) > 5,000 mg/kg*

Avian Subacute Dietary Toxicity: *LC50 (mallard duck) > 5,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rat) 1,581 mg/kg males, 1,338 mg/kg females*

OVERALL TOXICITY: *practically nontoxic*

Bioaccumulation Potential

Little potential

D.2.17 Garlon 3A, Garlon 4, and Pathfinder II (Cont.)

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils):

Syl-Tac, Hasten

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.2.18 Biobarrier and Biobarrier II

Common or Chemical Name(s): Trifluralin

Manufacturer(s): Reemay

EPA Registration Number(s):

Biobarrier	59823-1
Biobarrier II	59823-3

Formulation: ☐ Granule ☐ Liquid ☐ Emulsifiable Concentrate ☐ Wettable Powder ☒ Other (specify): The herbicide is formulated as a liquid, emulsifiable concentrate, granular, flowable concentrate, impregnated material, soluble concentrate/liquid, soluble concentrate/solid, and water dispersible granules (dry flowable).

Toxicity Information

Toxic Active Ingredients Listed on MSDS:

Trifluralin: a,a,a-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine

Toxicity Information on Toxic Active Ingredients (Lethal/Sublethal):

Microorganisms

Acute Contact Toxicity: *no information available*

OVERALL TOXICITY: *unknown*

Plants

Contact will injure or kill target and nontarget plants.

Aquatic Vertebrates

Acute Toxicity: *LC50 (bluegill sunfish 96-hour) 58 µg/L*

Acute Toxicity: *LC50 (rainbow trout 96-hour) 41 µg/L*

Acute Toxicity: *LC50 (largemouth bass 96-hour) 75 µg/L*

OVERALL TOXICITY: *highly toxic (depending on formulation)*

Aquatic Freshwater Invertebrates

Acute Toxicity: *LC50 (water flea 48-hour) 0.56 to 0.9 mg/L*

Acute Toxicity: *LC50 (stone fly 48-hour) 2.8 mg/L*

Acute Toxicity: *LC50 (side swimmer 48-hour) 2.2 mg/L*

OVERALL TOXICITY: *highly toxic (depending on formulation)*

Aquatic Estuarine/Marine Invertebrates

Acute Toxicity: *no available information*

OVERALL TOXICITY: *unknown*

Terrestrial Animals

Avian Acute Oral Toxicity: *LD50 (various birds) > 2,000 mg/kg*

Mammal Acute Oral Toxicity: *LD50 (rats) > 5,000 mg/kg*

OVERALL TOXICITY: *practically nontoxic (to birds and mammals)*

Bioaccumulation Potential

Moderate to high potential in aquatic species

Toxic Inert Ingredients Listed on MSDS: N/A

Toxicity Information on Toxic Inert Ingredients (Lethal/Sublethal): N/A

Trade Names of Adjuvants (Drift Control Agents, Stickers, Surfactants, Oils): N/A

Toxicity Information on Adjuvants (Lethal/Sublethal): N/A

D.3 HERBICIDES APPROVED BY THE U.S. FOREST SERVICE

Table D-2 lists the herbicides approved by Western, the Bureau of Land Management (BLM), and the U.S. Forest Service (USFS). Risk assessment summaries are then provided for the nine USFS-approved herbicides.

Table D-2 Herbicides Approved for Use by Various Landowner Agencies

Herbicide	Landowner Agency		
	Western	BLM	USFS
Bromacil	X	X	
Chlorsulfuron	X	X	X
Clopyralid	X	X	X
2,4-D	X	X	X
Dicamba	X	X	X
Diuron	X	X	
Fluroxypyr	X		
Glyphosate	X	X	X
Imazapyr	X	X	X
Mefluidide	X	X	
Oryzalin	X		
Oxyfluorfen	X		X
Paclobutrazol	X		
Pendimethalin	X		
Sulfometuron Methyl	X	X	X
Triclopyr	X	X	X
Trifluralin	X		

D.3.1 Chlorosulfuron

Chlorosulfuron is used by the USFS only for the control of noxious weeds. It is recommended for use on preemergent and early postemergent control of many annual, biennial, and perennial broadleaf weeds. The most common application methods are direct foliar application (e.g., from a backpack) and broadcast foliar application (e.g., using a boom sprayer). The typical application rate is about 0.056 lb/acre, and the likely range is about 0.0059 to 0.25 lb/acre, on the basis of the manufacturer's recommendations on the label.

Human Health Risks

Acute toxicity of chlorosulfuron in mammals is low, with no specific target organ identified in studies. The compound is not mutagenic in test species, and it has not been identified as a carcinogen. It is mildly irritating to the eyes and skin but not sensitizing to repeated application to skin. It is rapidly eliminated from the body, mostly in original form in urine, with a half-life of 6 hours in rats. Typical exposure scenarios would not result in doses to workers or members of the public that exceed a level of concern. Similarly, risks to terrestrial and aquatic animals in application areas are low.

Ecological Risks

Adverse impacts to nontarget plant species, both terrestrial and aquatic are likely, the degree of which depends on the means of application. Damage to nontarget terrestrial species could extend beyond 900 ft of the application site using broadcast application. Damage to aquatic plants, particularly macrophytes, is also possible, but likely much less substantial. Algal species are even less sensitive. Any concerns would only occur in areas where transport to water bodies after application was likely.

D.3.2 Clopyralid

Clopyralid is a selective herbicide used primarily in the control of broadleaf weeds. The USFS uses only a single commercial formulation of clopyralid, Transline[®]. Such use is almost exclusively in noxious weed control. Relatively minor uses include rights-of-way management, wildlife openings, and facilities maintenance. Transline is a liquid formulation of clopyralid that is manufactured by Dow AgroSciences and contains 40.9% clopyralid as the monoethanolamine salt and 59.1% inert ingredients. Technical grade clopyralid contains the contaminants hexachlorobenzene and pentachlorobenzene at average concentrations of less than 2.5 parts per million (ppm) and less than 0.3 ppm, respectively. The most common methods of ground application involve backpack (selective foliar) and boom spray (broadcast foliar) operations. USFS does not and does not intend to use Transline in aerial applications. The typical application rate in USFS programs is about 0.35 lb (acid equivalent)/acre, and the likely range is about 0.1 to 0.5 lb/acre. Application rates are expressed as “acid equivalent” (a.e.), or the equivalent amount (in pounds) of the active ingredient in the form of an organic acid when it is used in the form of various esters or salts of the active ingredient. Application rates expressed as “active ingredient” (a.i.) are used to indicate the amount (in pounds) of actual herbicide compound applied in formulations including other ingredients, such as carriers.

Human Health Risks

The acute toxicity of clopyralid is low in experimental mammals, and is expected to be similarly low in humans and mammalian wildlife. The most commonly observed sign of toxicity in test animals is central nervous system depression. No specific target organ toxicity was identified in chronic toxicity testing.

Technical grade clopyralid has been subject to several chronic bioassays for carcinogenicity and none of the bioassays have shown that clopyralid has carcinogenic potential. However, technical grade clopyralid contains low levels of hexachlorobenzene, which has shown carcinogenic activity in three mammalian species and has been classified as a potential human carcinogen by the U.S. Environmental Protection Agency (EPA). Risk analysis indicates, however, that the presence of contaminants in clopyralid does not appear to present any substantial cancer risk.

Based on the estimated levels of exposure and the criteria for acute and chronic exposure developed by the EPA, there is no evidence that typical or accidental exposures will lead to dose levels that exceed the level of concern for workers. For members of the general public, none of the longer-term exposure scenarios approach a level of concern, and none of the acute/accidental scenarios exceed a level of concern. Thus, the use of clopyralid does not appear to pose any risk of systemic toxic effects to workers or the general public in USFS programs.

Ecological Risks

Evaluation of the toxicity to nontarget terrestrial animals is based on the same studies used in the human health risk assessment on experimental mammals. Some additional studies are available on birds, bees, spiders, and earthworms and invertebrates that generally support the characterization of clopyralid as relatively nontoxic. As with terrestrial species, the available data on aquatic species, both plants and animals, suggest that clopyralid is relatively nontoxic.

Clopyralid is highly selective in its toxicity to terrestrial plants, and is relatively nontoxic to aquatic plants. So the potential for substantial effects on nontarget species appears to be remote. The phytotoxicity of clopyralid is relatively specific to broadleaf plants because clopyralid is rapidly absorbed across leaf surfaces but much less readily absorbed by the roots of plants. Thus, clopyralid is much more toxic/effective in postemergent treatments (i.e., foliar application) rather than preemergent treatment (i.e., application to soil).

Clopyralid does not bind tightly to soil and thus would have a high potential for leaching. The potential for leaching or runoff is reduced, however, by the relatively rapid degradation of clopyralid in soil. A number of field studies indicate that leaching and subsequent contamination of ground water is likely to be minimal.

D.3.3 2,4-D

2,4-D, the common name for 2,4-dichlorophenoxyacetic acid, is a selective systemic herbicide used to control broadleaf weeds. The USFS uses 2,4-D in its vegetation management programs. Herbicide formulations containing 2,4-D are most commonly used in wildlife opening, rights-of-way maintenance, and noxious weed control. Consequently, the most common application methods include backpack (selective foliar), hack-and-squirt, and roadside hydraulic spray applications. Many of the formulations are also registered for tree injection and stump removal. For ground applications, the USFS typically applies between 0.5 and 4 lb (a.e.)/acre with an average typical application rate of 1 lb (a.e.)/acre. The upper bound of 4 lb/acre is useful for site preparation or wildlife habitat improvement, which comprise relatively minor uses of 2,4-D. The direct application of 2,4-D formulations to water bodies may involve rates as high as 38 lb/acre.

The USFS uses 22 herbicide formulations of 2,4-D in which the compound is available as salts, esters, or combinations of salts and esters, and all but one of the formulations are liquid. The USFS has used 13 other herbicide formulations in which 2,4-D is a component. Herbicide mixtures of 2,4-D combined with triclopyr, dicamba, picloram, or glyphosate are all used by the USFS. 2,4-D is registered for both ground and aerial applications. Also, several formulations of 2,4-D, including Aqua-Kleen, can be applied directly to water to control noxious weeds. Although 2,4-D is registered for aerial applications, the USFS does not use this method to apply 2,4-D.

Human Health Risks

Based on the available human and animal evidence from subchronic, chronic, carcinogenicity, mutagenicity, developmental and reproductive toxicity studies in mice, rats, rabbits, and dogs and with consideration of the available epidemiological database, the World Health Organization (WHO) does not regard 2,4-D and its salts and esters as either genotoxic or carcinogenic.

Based on numerous unpublished studies submitted by registrants as part of the pesticide registration process, the EPA concludes that 2,4-D and its salts and esters are of low acute toxicity on the basis of oral, dermal, and inhalation routes of exposure, and are not skin sensitizers or primary skin irritants. However, 2,4-D acid and salts are severe eye irritants. Neurotoxicity is seen in laboratory animals following high dose exposure, while a developmental neurotoxicity study is still required by the registrants. 2,4-D is a Group D chemical (not classifiable) with regard to human carcinogenicity, and is not mutagenic. 2,4-D is considered representative of the various forms (salts and esters) under consideration.

On the basis of recent studies published in the open literature, 2,4-D is toxic to the immune system and developing immune system, especially when used in combination with other herbicides. The mechanism of action of 2,4-D toxicity is cell membrane disruption and cellular metabolic processes. The molecular basis for 2,4-D toxicity to human lymphocytes and nerve tissue is likely the induction of programmed cellular death known as apoptosis.

Analysis of plausible exposure scenarios indicates that adverse health outcomes are possible for workers who could be exposed repeatedly over a longer period of exposure. The hazard quotient (HQ), which is the estimated dose divided by the reference dose (Rfd), for workers spraying at

the typical application rate of 1 lb/acre is 16 for both backpack and aerial spray methods and 30 for ground spray application. (An HQ of >1 indicates possible adverse effects.) Short-term accidental exposures via contaminated gloves as well as some spill scenarios yield HQs that are of concern, particularly the scenario involving contaminated gloves that are worn for 1 hour, which yields an HQ of 94. For all of these HQs, the magnitude of the hazard quotient is linearly related to the application rate.

For members of the general public, upper bound HQs for accidental exposures associated with spills into a small body of water range from 0.8 (consumption of fish by nonsubsistence populations at an application rate of 0.5 lb/acre) to 328 (a child consuming 1 liter of contaminated water at an application rate of 4 lb/acre). The amounts spilled are set at the amounts required to treat from 1 to 100 acres. These assumptions are completely arbitrary and may be unrealistic. The scenario for an accidental spill into a small pond is intended only to illustrate the different consequences of spilling different amounts of 2,4-D.

The only HQs indicating that adverse health outcomes are plausible following longer term exposure to 2,4-D are those associated with ingestion of contaminated fruits and vegetation by an adult female. At the typical application rate of 1 lb/acre, the central estimate of the hazard quotient for the consumption of contaminated vegetation is 5 with lower and upper bounds of 1 and 38. Because lower residues are anticipated on contaminated fruit, the HQ associated with this scenario at an application rate of 1 lb/acre is 0.3 with an upper bound of 5. Other longer-term exposure scenarios involving the consumption of either contaminated water or fish yield HQs that are substantially below a level of concern even at the highest anticipated application rate.

Ecological Risks

The toxicity of 2,4-D is fairly well characterized in plants and animals. As in the human health risk assessment, the toxicity of the various forms of 2,4-D (i.e., acid, salts, and esters) are all treated as equally toxic to birds and mammals. For terrestrial plants, as well as aquatic plants and animals, the toxicity of 2,4-D acid and 2,4-D salts is considered separately from that of 2,4-D esters.

On the basis of classification schemes for acute toxicity developed by the EPA, 2,4-D is slightly to moderately toxic to mammals, practically nontoxic to moderately toxic to birds, and practically nontoxic to honey bees. Among mammals, dogs are more sensitive than other species to the effects of 2,4-D because of their limited capacity to excrete organic acids. The EPA classifies the toxicity of 2,4-D to freshwater and marine fish as practically nontoxic for 2,4-D acid/salts and highly toxic for esters. A similar pattern of toxicity is observed for aquatic invertebrates and amphibians. 2,4-D does not cause effects on reproduction or fetal development in birds or mammals at exposures that do not cause toxic effects in maternal animals.

A limited number of studies suggest that the effects of 2,4-D on soil microorganisms and invertebrates are possible. While 2,4-D is not likely to cause mortality among honey bees at any of the application rates employed by the USFS, other species of insects, such as parasitic wasps, may be affected, although dose-response relationships have not been defined.

2,4-D causes phytotoxicity in nontarget plants at concentrations that are likely used under field conditions, if precautions are not taken to limit spray drift. The effective use of 2,4-D is achieved by applying it to target vegetation at a time and in a manner that will minimize effects on nontarget plant species. If applied properly and with care, 2,4-D might have only minor effects on nontarget vegetation. Nonetheless, in the normal course of applying 2,4-D at rates effective for weed control, terrestrial plants may be adversely affected due to drift or runoff of the applied compound.

Damage to aquatic vegetation, particularly aquatic macrophytes, is likely in the event of an accidental spill or in the case of direct application of 2,4-D to control aquatic weeds. Longer term exposure to 2,4-D concentrations associated with inadvertent contamination of water by runoff could affect sensitive species of macrophytes at the upper range of the application rates used in USFS programs.

Over the range of 2,4-D acid/salt application rates used in USFS programs (0.5 to 4 lb/acre), adverse effects on fish, amphibians, and aquatic invertebrates are likely only in the event of an accidental spill. With regard to 2,4-D esters, however, adverse effects on aquatic animals (fish, invertebrates, amphibians) are plausible in association with runoff (all application rates) and would be expected in direct application for weed control and in cases of relatively large accidental spills. Over the range of application rates used in USFS programs, adverse effects are plausible in mammals that consume contaminated vegetation or insects after 2,4-D is applied at the typical and maximum application rates. Adverse effects are unlikely, however, at the lower application rate.

Similarly, adverse effects are plausible among carnivorous mammals that consume contaminated small mammals after 2,4-D is applied at the typical and maximum rates but at not the lowest anticipated application rate. On the basis of reproduction studies, birds appear to more tolerant of 2,4-D than are mammals. Furthermore, longer term exposure to 2,4-D is not likely to cause adverse effects in birds. Nevertheless, adverse effects in birds after acute exposure to 2,4-D is a concern. In addition to the direct effects mentioned above, secondary adverse effects in terrestrial and aquatic animals might result from adverse effects of 2,4-D on vegetation. Certain effects could be detrimental for some but beneficial to others.

D.3.4 Dicamba

Two commercial formulations of dicamba may be used in USFS programs: Vanquish[®] and Banvel[®]. Banvel is the dimethylamine salt of dicamba, and Vanquish is the diglycolamine (DGA) salt of dicamba. Both products are recommended for the control of a variety of broadleaf weeds and woody vegetation. Proposed application methods for dicamba include roadside hydraulic spraying, cut-surface treatments, and directed foliar treatments. For Banvel, the labeled application rates range from 0.25 to 2 lb of dicamba (a.e.)/acre. For Vanquish, the labeled application rates range from 0.25 to 1 lb/acre, and the upper limit of the application rate for Vanquish over a single growing season is 2 lb/acre.

Human Health Risks

In acute exposures, dicamba is relatively nontoxic by oral administration in rats. There are no clear indications that the dimethylamine salt (e.g., Banvel), sodium salt, or methyl ester derivatives differ significantly from the toxicity of dicamba, or that the toxicity of these forms differs significantly between species or sexes. No information was located on the acute toxicity of the diglycolamine salt (e.g., Vanquish). Dicamba is rapidly and extensively absorbed following oral exposure and rapidly excreted predominantly as unmetabolized compound in the urine. Dermal absorption of dicamba has been demonstrated but is less well studied than oral absorption.

Dicamba does not appear to be carcinogenic, and there is no information indicating species effects on immune or endocrine function. Elevated chronic exposure may cause neurotoxic effects.

At the typical application rates of 0.3 lb/acre, workers would not be exposed to levels of dicamba that are regarded as unacceptable. At the maximum application (2 lb/acre), however, worker exposure to dicamba would exceed a level of concern at the upper range of plausible exposures. Members of the general public could be at some risk at the typical application rate only in the event of worst-case exposure assumptions for two accidental exposures involving children. On the basis of multiple sources of exposure, however, the levels of exposure would modestly exceed a level of concern for adults at the typical application rate. At the highest application rate that might be used in USFS programs, many of the acute exposure scenarios exceed a level of concern at the upper range of exposure. For longer term exposures, no risks are apparent at the typical application rate. At the highest application rate, however, the consumption of contaminated vegetation exceeds a level of concern at the upper range of nonaccidental and plausible exposures.

Ecological Risks

Dicamba is relatively nontoxic by oral administration in mammals, as noted above. The acute toxicity of dicamba to birds and to the honey bee appears generally to be low and consistent with the studies in rats. Very little information is available on the toxicity of dicamba to terrestrial invertebrates.

A large number of phytotoxicity studies are available on dicamba. In preemergence assays with standard nontarget species, the most sensitive species appears to be soybean, and the least sensitive species appears to be cabbage. In postemergence applications, the most sensitive species appears to be soybean and the most tolerant species appears to be corn. There is very little indication that dicamba will adversely affect soil microorganisms.

Acute toxicity studies in fish indicate that dicamba is relatively nontoxic, although salmonids appear to be more sensitive than other freshwater fish to the acute toxicity of dicamba. Amphibians seem to have sensitivity to dicamba that is similar to that of fish. Some aquatic invertebrates appear to be somewhat more sensitive than fish and amphibians to the acute toxicity of dicamba. Some but not all aquatic plants are much more sensitive to dicamba than aquatic animals, while other aquatic plants are much more tolerant.

D.3.5 Glyphosate

Glyphosate is a herbicide that is used in USFS programs primarily in conifer release, noxious weed control, and site preparation. There are currently 35 commercial formulations of glyphosate that are registered for forestry applications. All contain the isopropylamine salt of glyphosate. Some formulations contain only this salt of glyphosate as an aqueous solution. Other formulations contain surfactants, and some of these surfactants are toxic, particularly to aquatic organisms. Technical grade glyphosate contains an impurity, N-nitrosoglyphosate, but the amount of this impurity in glyphosate has been classified as toxicologically insignificant by the EPA. A surfactant used in at least one major commercial formulation contains 1,4-dioxane, and the toxicity of this impurity is specifically considered in risk assessment. The most common method of application for glyphosate in USFS programs involves backpack-applied directed foliar sprays. Other application methods that are used occasionally are broadcast foliar ground applications, cut-stem applications, and direct application to the emergent aquatic vegetation. On the basis of recent USFS use reports, the typical application rate is about 2 lb (a.e.)/acre, with most application rates occurring over a range of 0.5 lb (a.e.)/acre to 7 lb (a.e.)/acre.

Human Health Risks

The herbicidal activity of glyphosate is due primarily to the inhibition of the shikimate pathway, which is involved in the synthesis of aromatic amino acids in plants and microorganisms. This metabolic pathway does not occur in humans or other animals, thus this mechanism of action is not directly relevant to the human health risk assessment. Both glyphosate and the polyethoxylated tallow amine (POEA) surfactant used in Roundup® will damage mucosal tissue, although the mechanism of this damage is likely to differ for these two agents. Many of the effects of acute oral exposure to high doses of glyphosate or Roundup are consistent with corrosive effects on the mucosa.

The available experimental studies indicate that glyphosate is not completely absorbed after oral administration and is poorly absorbed after dermal applications. Glyphosate also has low toxicity, but like all chemicals, may be toxic at very high exposure levels. Gastrointestinal effects (vomiting, abdominal pain, diarrhea); irritation, congestion, or other forms of damage to the respiratory tract; pulmonary edema; decreased urinary output sometimes accompanied by acute renal tubular necrosis; hypotension; metabolic acidosis; and electrolyte imbalances, probably secondary to the gastrointestinal and renal effects, have been seen in human cases of acute glyphosate/surfactant exposure.

Subchronic or chronic exposure to glyphosate can result in loss of body weight, as has been noted in mice, rats, dogs, and rabbits. Other reported signs of toxicity have been general and nonspecific, including changes in liver weight and blood chemistry that would suggest mild liver toxicity, or liver pathology. Changes in pituitary weight have also been observed. Signs of kidney toxicity have not been reported consistently and are not severe. Various hematological changes have been observed that may be secondary to mild dehydration.

In both animal and human data, there is no clear pattern of specific neurotoxicity for glyphosate or its commercial formulations. Similarly, no studies are reported that indicate abnormalities in

lymphoid tissues, which could be suggestive of an effect on the immune system. Studies do not indicate a basis for suggesting that glyphosate is an endocrine disruptor.

No signs of teratogenic activity, including birth defects, have been observed in standard assays in both rats and rabbits. In epidemiological studies, adverse reproductive effects have not been noted.

Based on standard animal bioassays for carcinogenic activity *in vivo*, there is no basis for concluding that glyphosate is likely to pose a substantial risk. The Reregistration Eligibility Decision document on glyphosate prepared by the EPA indicates that glyphosate is classified as Group E (evidence of noncarcinogenicity for humans). While, as with any compound that has been studied for a long period of time and tested in a large number of different systems, some studies have indicated marginal carcinogenic activity, there is no compelling basis for challenging the position taken by the EPA. Thus, no quantitative risk assessment for cancer has been conducted as part of the current analysis.

The risk characterization for both workers and members of the general public are reasonably consistent and unambiguous. For both groups, there is very little indication of any potential risk at the typical application rate of 2 lb/acre. Even at the upper range of plausible exposures in workers, most hazard quotients are below the level of concern.

For members of the general public, none of the longer-term exposure scenarios exceed or even approach a level of concern. Although there are several uncertainties in the longer-term exposure assessments for the general public, the upper limits for hazard indices are below a level of concern by factors of about 25 (longer-term consumption of contaminated fruit) to more than 2 million (2.5 million for longer-term consumption of fish by the general population). On the basis of available information and under the foreseeable conditions of application and exposure, there is no route of exposure or exposure scenario suggesting that the general public will be at risk from longer-term exposure to glyphosate.

Ecological Risks

Loss of body weight is the most commonly seen effect of glyphosate in mammals given acute doses of glyphosate. Inhibition of oxidative phosphorylation has been implicated as a possible mechanism by which glyphosate causes weight loss in experimental mammals. Because toxicity data in mammals are available in few species of experimental mammals, evaluating the potential hazards to a large number of diverse mammalian wildlife species is an uncertain process. Nonetheless, there do not appear to be any systematic differences among mammalian species, including humans, when comparable toxicity values are expressed in units of mg/kg/day.

The available toxicity studies do not suggest any specific or unique toxicity in birds compared to mammals. Glyphosate may inhibit oxidative phosphorylation and consequently reduce food conversion efficiency, as in mammals. There is similarly an apparent lack of teratogenic activity in birds. Glyphosate is readily metabolized by soil bacteria, and many species of soil microorganisms can use glyphosate as sole carbon source.

In higher plants, inhibition of the shikimic acid pathway leads to an inhibition or cessation of growth, cellular disruption, and, at sufficiently high levels of exposure, plant death. The time course for these effects can be relatively slow, depending on the plant species, growth rate, climate, and application rate. Gross signs of toxicity include wilting and yellowing of the vegetation, followed by browning, breakdown of plant tissue, and ultimately root decomposition. Unintended drift is one of the more plausible exposure scenarios for nontarget terrestrial plant species.

The current risk assessment for glyphosate generally supports the conclusions reached by the EPA that, on the basis of current data, effects to birds, mammals, fish, and invertebrates are minimal. At the typical application rate of 2 lb/acre, none of the exposures for acute or chronic scenarios reach a level of concern for terrestrial organisms. For the application rate of 7 lb/acre, potential exposures somewhat exceed a level of concern for the honey bee for direct spray. Potential exposures modestly exceed a level of concern in acute scenarios that involve a large mammal consuming contaminated vegetation and a small bird consuming insects.

For relatively tolerant nontarget species of plants, there is no indication that glyphosate is likely to result in damage at distances as close as 25 ft from the application site. For sensitive species at the upper range of application rates, modest effects would be expected at distances of 100 ft or less. All of these drift estimates are based on low-boom ground sprays; many applications of glyphosate are conducted by directed foliar applications using backpacks. In such cases, little if any damage due to drift would be anticipated. Nontarget terrestrial plants are not likely to be affected by runoff of glyphosate under any conditions.

The primary hazards to fish appear to be from acute exposures to the more toxic formulations, but only under worst-case conditions. Scenarios where exposure estimates are based on a severe rainfall (about 7 in. over a 24-hour period) in an area where runoff is favored — a slope toward a stream immediately adjacent to the application site — strongly suggests that the use of the more toxic formulations near surface water is not prudent.

The use of less toxic formulations results in potential exposures that do not approach a level of concern for any species. Nonetheless, the use of glyphosate near bodies of water where sensitive species of fish may be found (i.e., salmonids) should be conducted with substantial care to avoid contamination of surface water. Concern for potential effects on salmonids is increased by the potential effects of low concentrations of glyphosate on algal populations.

The likelihood of direct acute toxic effects on aquatic invertebrates or longer-term direct effects on any fish species is extremely remote. Aquatic plants appear to be somewhat less sensitive to glyphosate than the most sensitive aquatic animals. There is no indication that adverse effects on aquatic plants are plausible.

D.3.6 Imazapyr

Imazapyr is a herbicide that is used in the control a variety of grasses, broadleaf weeds, vines, and brush species, site preparation and conifer release, and rights-of-way maintenance. Four formulations of imazapyr may be used in USFS programs: Arsenal[®], Arsenal AC[®] (applicators concentrate), Chopper[®], and Stalker[®], all of which contain imazapyr as the isopropylamine salt. While imazapyr formulations can be used in preemergence applications, the most common and effective applications are postemergent when the vegetation to be controlled is growing vigorously. The most common methods of ground application for Arsenal or Chopper formulations involve backpack (selective foliar) and boom spray (broadcast foliar) operations. Cut-surface treatment methods may also be used by the USFS in applications of Stalker and Arsenal AC and could be used with other imazapyr formulations. Boom spray applications are used primarily in rights-of-way management. Arsenal is registered for aerial applications, and aerial applications in USFS programs are restricted to helicopter only. USFS uses imazapyr primarily in conifer or hardwood release, conifer release, wildlife habitat improvement, and rights-of-way management. Lesser amounts are used in noxious weed control, hardwood release, and housekeeping/facilities maintenance.

Application rates used to construct the various exposure scenarios used in risk assessment range from 0.03 lb (a.e.)/acre to 1.25 lb (a.e.)/acre with a typical rate taken as 0.45 lb (a.e.)/acre. The typical application rate is about the average application rate that the USFS used in 2001 for noxious weed control and is near the geometric mean of the recommended range of application rates, 0.125 to 1.25 lb/acre.

Human Health Risks

The toxicity of imazapyr has been relatively well characterized in experimental mammals. In humans, symptoms of acute ingestion include vomiting, impaired consciousness, and respiratory distress, requiring intubation. No fatal cases of imazapyr ingestion have been encountered.

Although the mode of action of imazapyr in humans or other mammals is unclear, this is a reflection of the apparently low and essentially undetectable acute and chronic systemic toxicity of this compound. An adequate number of multigeneration reproductive and developmental studies have been conducted, and no adverse effects on reproductive capacity or normal development have been demonstrated. Tests of carcinogenic and mutagenic activity are consistently negative, and the EPA has categorized the carcinogenic potential of imazapyr as Class E (evidence of noncarcinogenicity).

The weight of evidence suggests that imazapyr is not directly neurotoxic, and the available data do not suggest that systemic toxic effects are plausible after dermal or inhalation exposures to imazapyr. Similarly, while the available data are limited, there is no basis for asserting that impurities or adjuvants in or metabolites of imazapyr are likely to produce toxic effects. Imazapyr and imazapyr formulations can be mildly irritating to the eyes and skin. This effect can be minimized or avoided by prudent precautions during the handling of the compound.

Typical exposures to imazapyr do not lead to estimated doses that exceed a level of concern for either workers or members of the general public at either the typical or highest application rate.

Although there are several uncertainties in the exposure assessments for workers and the general public, the upper limits for hazard quotients associated with the longer-term exposures are sufficiently below a level of concern that the risk characterization is relatively unambiguous. On the basis of available information and under the foreseeable conditions of application, there is no route of exposure or scenario suggesting that the workers or members of the general public will be at any substantial risk from longer-term exposure to imazapyr even at the upper range of the application rate considered in risk assessment.

Ecological Risks

As with the human health risk assessment, the great majority of the toxicity studies have failed to demonstrate any significant or substantial association between imazapyr exposure and toxicity. While few wildlife species have been assayed relative to the large number of nontarget animal species that might be exposed to imazapyr, no hazards associated with the direct toxic action of imazapyr have been identified for either terrestrial or aquatic animals.

The toxicity of imazapyr to terrestrial plants is relatively well characterized. Imazapyr is practically nontoxic to conifers, but it is toxic to many other nontarget plants. Imazapyr inhibits acetolactate synthase, an enzyme that catalyzes the biosynthesis of three branched-chain amino acids, all of which are essential for plant growth. Although postemergence application is more effective than preemergence application, toxicity can be induced either through foliar or root absorption. Imazapyr is not metabolized extensively in plants but is transported rapidly from treated leaves to root systems and may be exuded into the soil from the roots of treated plants.

Imazapyr is relatively nontoxic to soil microorganisms, aquatic invertebrates, and fish. Imazapyr is not expected to bioaccumulate in the food chain. In terrestrial animals and birds, imazapyr is practically nontoxic. A number of standard bioassays are available on the toxicity of imazapyr to aquatic plants. The most sensitive species appears to be aquatic macrophytes. Some aquatic algae appear to be substantially less sensitive.

Imazapyr is an effective herbicide, and even tolerant plants that are directly sprayed with imazapyr at normal application rates are likely to be damaged. Some sensitive plant species could be affected by the off-site drift or by off-site movement in runoff of imazapyr depending on site-specific conditions. When applied to areas in which runoff is favored, damage from runoff appears to pose a greater hazard than drift. Residual soil contamination with imazapyr could be prolonged in some areas, such as in relatively arid areas in which microbial degradation may be the main degradation route. Residual toxicity to sensitive plant species could last for several months to several years in such soils. In areas of relatively high rainfall rates, residual toxicity to sensitive plant species would be much shorter.

Some effects are also plausible in aquatic plants. Aquatic macrophytes appear to be more sensitive to imazapyr than algae. Peak concentrations of imazapyr in surface water could be associated with adverse effects in some aquatic macrophytes. Expected longer-term concentrations of imazapyr, however, are substantially below a level of concern.

Adverse effects in terrestrial or aquatic animals do not appear to be likely. The weight of evidence suggests that no adverse effects on mammals, birds, fish, and terrestrial or aquatic invertebrates are plausible using typical or worst-case exposure assumptions at the typical application rate of 0.45 lb/acre or the maximum application rate of 1.25 lb/acre.

While imazapyr has been tested in only a limited number of species and under conditions that may not well-represent populations of free-ranging non-target organisms, the available data are sufficient to conclude that no adverse effects on animals are anticipated.

D.3.7 Oxyfluorfen

Oxyfluorfen is a diphenyl-ether herbicide that is used to control a large number of broadleaf and grassy weeds in both forestry and agriculture. In USFS programs, oxyfluorfen is used almost exclusively in tree nursery applications. Oxyfluorfen is not very soluble in water. All commercial formulations of oxyfluorfen that are labeled for forestry applications are liquid, in which oxyfluorfen is dissolved in petroleum solvents or propylene glycol. Although oxyfluorfen is registered for aerial applications in some crop uses, the USFS does not use oxyfluorfen in aerial applications. Most nursery applications in USFS programs are conducted using mechanized equipment such as boom sprays. The highest labeled application rate for oxyfluorfen is 2 lb (a.i.)/acre, and this is also the maximum amount of oxyfluorfen that may be applied in a given year, and it is the highest application rate reported in any USFS program. For risk assessment, the typical application rate is taken as 1 lb (a.i.)/acre with a range of 0.25 lb (a.i.)/acre to 2 lb (a.i.)/acre.

Human Health Risks

Oxyfluorfen is rapidly absorbed and excreted, primarily as unchanged compound in the feces and urine following oral exposure; very little remains in the tissues. Oxyfluorfen is not appreciably absorbed following dermal exposure, and what is absorbed, is rapidly excreted.

Oxyfluorfen is known to inhibit protoporphyrinogen oxidase resulting in inhibition of heme biosynthesis and induction of symptoms in rodents consistent with the expression of human variegate porphyria (i.e., effects on the liver, blood, blood-forming tissue). Oxyfluorfen is of a low order of acute oral toxicity, is a mild eye and skin irritant, and only causes reproductive and developmental effects in rodents and rabbits at otherwise toxic doses and concentrations. High-purity technical grade oxyfluorfen is not mutagenic in standard bioassays. An increased incidence of combined liver adenoma/carcinoma in a cancer bioassay with mice results in oxyfluorfen being classified by the EPA as a Group C possible human carcinogen. An inert ingredient in oxyfluorfen formulations, N-methyl-pyrrolidone, also has been shown to cause liver adenoma/carcinomas in a cancer bioassay with mice and to cause teratogenic effects in rats.

Estimates of risks due to systemic toxicity indicate that workers with contaminated gloves (i.e., leaky or loose gloves that allow the hand to be immersed in herbicide) or not wearing appropriate protective equipment may be at greatest risk due to acute exposure to oxyfluorfen, regardless of application rate.

For members of the general public, the acute exposure scenarios resulting in systemic toxicity that exceed a level of concern involve an accidental spill into a small pond, direct spray of a small child, and consumption of contaminated fruit and vegetation by an adult female. The only nonaccidental acute scenarios that result in potential exposures that substantially exceed a level of concern are those associated with longer-term exposure to contaminated vegetation. Likewise, the only exposure scenarios resulting in a cancer risk of more than 1 in one million are for adult females consuming contaminated vegetation. While these scenarios yield risks that exceed a level of concern, they are not likely to occur in remote areas where residences are distant from herbicide application sites.

Ecological Risks

The toxicity of oxyfluorfen is fairly well characterized in plants and animals. Inert ingredients in the formulations are responsible for much of the observed toxicity, including dermal and ocular irritation in mammals, acute toxicity in mammals, acute toxicity in aquatic invertebrates, and acute toxicity in aquatic algae.

Oxyfluorfen is practically nontoxic to mammals, birds, and honey bees; highly toxic to fish; and very highly toxic to aquatic invertebrates. Oxyfluorfen does not cause effects on reproduction or fetal development in birds or mammals at doses/concentrations that do not cause toxic effects in maternal animals. Oxyfluorfen causes phytotoxicity in nontarget plants at concentrations that are likely used under field conditions, but these effects are often transient and reversible, depending on the species, cultivar, and application rates used. Effects on soil microorganisms are also likely to be transient.

Oxyfluorfen is an herbicide that disrupts photosynthesis. The effective use of oxyfluorfen is achieved by applying it to target vegetation at a time and in a manner that will minimize effects on nontarget plant species. Nonetheless, in the normal course of applications of formulations at rates that are effective in weed control, adverse effects on terrestrial plants are possible due to either drift or runoff. Depending on local conditions and the proximity of streams or ponds, damage to aquatic vegetation is also possible and could be substantial.

Over the range of application rates used in USFS programs (0.25 to 2 lb/acre), adverse effects on aquatic vegetation and invertebrates are likely if steps are not taken to prevent oxyfluorfen from entering nearby ponds or streams. Adverse effects in fish are likely only in association with the maximum application rate of 2 lb/acre.

Over the range of application rates used in USFS programs, adverse effects are plausible in mammals consuming contaminated vegetation and insects following application at the typical and maximum application rates, but not likely at the lower application rate. There is no indication that substantial numbers of mammals would be subject to lethal exposure to oxyfluorfen. Birds appear to be much more tolerant of oxyfluorfen than mammals, and adverse effects on birds are unlikely.

D.3.8 Sulfometuron Methyl

Sulfometuron methyl is a nonselective, sulfonyl urea herbicide used in the control the growth of broadleaf weeds and grasses. The only commercial formulations of sulfometuron methyl used by the USFS are Oust[®] and Oust XP[®]. Oust and Oust XP are manufactured by Du Pont as a water-dispersible granule. The composition of the product is 75% sulfometuron methyl and 25% inert ingredients. Sulfometuron methyl is used in USFS programs primarily for the control of noxious weeds. Minor uses include conifer release and rights-of-way management. The most common methods of ground application for Oust and Oust XP involve backpack (selective foliar) and boom spray (broadcast foliar) operations. The USFS does not use aerial applications for Oust or Oust XP. Nonetheless, both formulations are registered for aerial applications, and aerial applications are included in this risk assessment in the event the USFS may wish to consider this application method. For risk assessment, the typical rate is 0.045 lb/acre. A range of application rates will be taken as 0.03 lb/acre to 0.38 lb/acre to reflect plausible ranges that the USFS may use. An upper range of 0.38 lb/acre is used to assess the consequences of using the highest labeled rate, should the USFS need to consider this option. The lower range is the lowest rate reported by the USFS.

Human Health Risk

In experimental mammals, sulfometuron methyl exhibits a low order of toxicity. Acute exposure studies indicate that formulations of sulfometuron methyl (e.g., Oust) are not more toxic than sulfometuron methyl alone. The most common signs of toxicity involve changes in blood that are consistent with hemolytic anemia (i.e., a lysis or destruction of blood cells that results in a decreased number of red blood cells) and decreased gains in body weight. Appropriate tests have provided no evidence that sulfometuron methyl causes malformations or cancer. Sulfometuron methyl is irritating to the skin and eyes but does not produce sensitizing effects following repeated dermal exposure.

There is some concern regarding potential reproductive and teratogenic effects from exposure to sulfometuron methyl based on studies in rabbits and rats. The observed effects, however, were not consistently dose-related and do not appear to be the most sensitive effect for sulfometuron methyl.

Sulfometuron methyl does not appear to concentrate in tissues and is eliminated fairly rapidly, with a half-life in goats ranging from 28 to 40 hours. In goats, nearly all of the administered sulfometuron methyl dose was excreted in urine. While studies on the toxicity of sulfometuron methyl metabolites have not been conducted, such toxicity is likely to be encompassed by the available mammalian toxicity studies.

Regarding inhalation toxicity, available studies indicate that sulfometuron methyl induces irritant effects at very high exposure levels. Such exposures, however, are highly unlikely in normal use. Skin absorption is the primary route of exposure of concern for workers. Irritation and damage to the skin and eyes can result from exposure to relatively high levels of sulfometuron methyl. These effects can be minimized or avoided through appropriate precautions taken during handling.

Typical exposures to sulfometuron methyl do not lead to estimated doses that exceed a level of concern. For workers, no exposure scenario, acute or chronic, exceeds a level of concern at the typical application rate of 0.045 lb/acre. For members of the general public, potential exposures similarly do not exceed a level of concern for the typical application rate. Thus, based on the available information and under the foreseeable conditions of application, there is no route of exposure or scenario suggesting that workers or members of the general public will be at any substantial risk from acute or longer term exposures to sulfometuron methyl.

Ecological Risks

In standard experimental toxicity studies, sulfometuron methyl has low acute and chronic oral mammalian toxicity; however, there is relatively little information regarding nontarget wildlife species. The most sensitive effects in experimental mammals were changes to blood and decreased body weight gain. Results of acute exposure studies in birds indicate that avian species appear no more sensitive than experimental mammals to the toxic effects of sulfometuron methyl. Acute exposure studies in honey bees indicate that bees are no more sensitive than either mammals or birds to sulfometuron methyl. However, the available data are not sufficient to be generalized to other species of terrestrial invertebrates.

The toxicity of sulfometuron methyl to terrestrial plants is well characterized. Sulfometuron methyl inhibits acetolactate synthase, an enzyme that catalyzes the biosynthesis of three branched-chain amino acids essential for plant growth. Results of both preemergent and postemergent bioassays show that terrestrial plants are highly susceptible to the effects of sulfometuron methyl. Sulfometuron methyl exposure also inhibited growth of several soil microorganisms in studies.

Available data suggest that sulfometuron methyl is much more toxic to aquatic plants than to aquatic animals. The results of studies in fish suggest that frank toxic effects are not likely to be observed at concentrations less than or equal to 150 mg/L. Sulfometuron methyl also appears to be relatively nontoxic to aquatic invertebrates, based on acute bioassays in daphnids, crayfish, and field-collected species of other aquatic invertebrates. The most sensitive aquatic species tested appears to be the African clawed frog. Among aquatic plants, macrophytes appear to be generally more sensitive than algae, although there appear to be substantial differences in sensitivity among species.

Since sulfometuron methyl is an effective and potent herbicide, adverse effects on some nontarget terrestrial plant species and, to a lesser degree, some aquatic plant species are likely under some conditions. The typical application rate considered in risk assessment, 0.045 lb/acre, is about 1,875 times higher than the no-observed-effects concentration (NOEC) in the vegetative vigor assay (direct spray) of the most sensitive nontarget species and almost 60 times higher than the NOEC for the most tolerant species in the same assay. The highest application rate that may be considered in USFS programs, 0.38 lb/acre, is over 15,000 times the NOEC in sensitive species and a factor of about 490 above the NOEC in tolerant species. Given these relationships, damage to sensitive nontarget species could be expected in ground broadcast applications at distances up to about 900 ft from the application site in areas in which off-site drift is not

reduced by foliar interception. When used in directed foliar applications (i.e., backpack), offsite drift could be reduced substantially but the extent of this reduction cannot be quantified.

The off-site movement of sulfometuron methyl could be substantial under conditions that favor runoff (e.g., clay soils). HQs in the range of about 90 to nearly 2,900 are estimated for sensitive species over a wide range of rainfall rates. Effects of runoff would be relevant to either broadcast ground or directed foliar applications. In very arid regions in which runoff might not be substantial, wind erosion could result in damage to nontarget plant species.

Damage to aquatic plants, particularly macrophytes, appears substantially less than for terrestrial plants. Thus, if sulfometuron methyl is applied in areas where transport to water containing aquatic macrophytes is likely, it would be plausible that detectable but transient damage could be observed. It is not anticipated that adverse effects in aquatic algae would result from exposure to sulfometuron methyl at typical application rates.

There is no clear basis for suggesting that effects on terrestrial animals are likely or would be substantial. Adverse effects in mammals, birds, terrestrial insects, and microorganisms are not likely on the basis of typical or worst-case exposure assumptions at the typical application rate of 0.045 lb/acre. While sulfometuron methyl has been tested in only a limited number of species, the available data are sufficient to conclude that no adverse effects would be anticipated in terrestrial animals.

Similarly, sulfometuron methyl appears to have a very low potential to cause any adverse effects in aquatic animals. All of the HQs for aquatic animals are extremely low. It should be noted that confidence in this conclusion is reduced by the lack of chronic toxicity studies in potentially tolerant fish and potentially sensitive aquatic invertebrates and lack of data in amphibians. Even with these uncertainties, there is no basis for concluding that adverse effects on aquatic animals are likely.

D.3.9 Triclopyr

Triclopyr mimics auxin, a plant growth hormone, thus disrupting the normal growth and viability of plants. Triclopyr is used in USFS programs primarily for wildlife habitat improvement, noxious weed control, conifer or hardwood release, and site preparation, with other minor uses including rights-of-way management, hardwood control, facilities maintenance, and seed orchard protection. Two forms of triclopyr are used commercially as herbicides: the triethylamine salt (TEA) and the butoxyethyl ester (BEE). Currently, there are five commercial formulations of triclopyr that are registered for forestry applications: Garlon 3A[®], Garlon 4[®], Forestry Garlon 4[®], Pathfinder II[®], and Remedy RTU[®]. Garlon 3A contains the triethylamine salt of the triclopyr and inert ingredients and requires the use of a nonionic surfactant. In addition to triethylamine, Garlon 3A contains EDTA, a common chelating agent, and ethanol. Garlon 3A, marketed as Renovate 3, has recently been labeled for aquatic weed control. The other commercial formulations contain the butoxyethyl ester of triclopyr, often referred to as triclopyr-BEE. Garlon 4 and Forestry Garlon 4 both contain kerosene and proprietary surfactants. For risk assessment and on the basis of recent USFS applications, the average application rate is 1 lb (a.e.)/acre with a range of 0.05 lb (a.e.)/acre to 10 lb (a.e.)/acre.

Human Health Risks

Toxicity studies regarding on triclopyr suggest that the liver and kidney are the primary target organs. Triclopyr is excreted primarily in the kidney by an active transport process. Triclopyr has a low order of acute lethal potency. A large number of subchronic and chronic toxicity studies are available on triclopyr. There is no information suggesting that triclopyr causes direct adverse effects on the nervous system, endocrine system, or immune function. At doses that do not cause maternal toxicity, there is no apparent concern for either reproductive or teratogenic effects. At substantially higher doses that are maternally toxic, triclopyr has been shown to result in birth defects. Most of abnormalities have been indicative of delayed growth and have been associated with maternal toxicity. The EPA reviewed available cancer studies in rats and mice and determined that the evidence for carcinogenicity is marginal and so has not recommended a quantitative dose-response assessment for the carcinogenicity of triclopyr.

The major metabolite of triclopyr in both mammals and the environment is 3,5,6-trichloro-2-pyridinol, commonly abbreviated as TCP. This compound, which is also a metabolite of chlorpyrifos, is toxic to mammals as well as other species. While there is no indication that the general exposures to TCP from the use of triclopyr and/or chlorpyrifos will result in harmful levels of exposure, risk assessment does specifically include a consideration of such exposures.

There is no indication that workers will be subject to acutely hazardous levels of triclopyr at the typical application rate of 1 lb/acre and under typical exposure conditions. However, potential exposures from all application methods at the upper range exceed the level of concern for chronic toxicity. Thus, workers should apply appropriate protective procedures to avoid such chronic exposures. At application rates that approach the maximum 10 lb/acre, measures should be taken to limit exposure in any case.

For members of the general public, at the typical application rate of 1 lb/acre, there is no route of exposure or exposure scenario suggesting that the general public will be at risk from longer-term exposure to triclopyr. Even at the maximum projected application rate of 10 lb/acre, the only longer-term scenario that exceeds the level of concern is the consumption of contaminated fruit. Several acute exposure scenarios are above the level of concern at the upper range of exposure. At an application rate of 10 lb/acre, both triclopyr BEE and triclopyr TEA formulations would exceed the level of concern for dermal exposure scenarios at the upper range as well as some central estimates of exposure. All of these dermal exposure assessments are extremely conservative and designed to identify which possible types of exposure would be most hazardous. For triclopyr, such scenarios include dermal contact and accidental spills into water.

EPA analyses of dietary exposure to TCP from the use of triclopyr as well from the use of both triclopyr and chlorpyrifos indicate that dietary exposures would be substantially below a level of concern. Risk assessment of exposures to TCP based on modeling of water contamination from the application of both triclopyr and chlorpyrifos indicate that the peak exposure to TCP in water is below the concentration associated with the chronic risk value for TCP. Thus, there is no basis for concluding that the use of triclopyr with or without the use of chlorpyrifos will result in hazardous exposures of humans to TCP.

Ecological Risks

Reproductive effects are an endpoint of concern to both the human health and ecological risk assessments. For birds, the EPA has classified triclopyr acid as being practically nontoxic to slightly toxic to birds and triclopyr TEA and triclopyr BEE (Garlon 4) as practically nontoxic to birds. Based on standard bioassays in the honey bee, the EPA has classified triclopyr as practically nontoxic to bees. Very high concentrations of triclopyr have been shown to cause growth inhibition in bacteria and fungi in laboratory bioassays.

Triclopyr mimics indole auxin plant growth hormones and causes uncontrolled growth in plants. In studies of seedling emergence and vegetative vigor in nontarget plants, Triclopyr BEE is about equally toxic in both types of assays with the lowest NOEC being 0.0036 lb/acre for seedling emergence and 0.0039 lb/acre for vegetative vigor. Triclopyr TEA, on the other hand, is much less toxic in the seedling emergence assay, with a NOEC of 0.333 lb/acre. For the most sensitive species tested, the NOEC for triclopyr TEA in the vegetative vigor assay is 0.0041 lb/acre, about the same as that of triclopyr BEE. The least sensitive species, however, had a much higher NOEC of 0.0111 lb/acre.

In field studies that have assessed the effects of triclopyr on terrestrial animals and plants, there is very little suggestion in that triclopyr has any direct adverse effect on terrestrial species, and most reported effects may simply reflect changes in habitat.

There is a major difference in the potential hazards posed by triclopyr TEA formulations (e.g., Garlon 3A) and triclopyr BEE formulations (e.g., Garlon 4) to fish, but there are no remarkable differences among species in terms of sensitivity to the various agents. The sublethal effects of Garlon 4 on a salmonid (rainbow trout) have been assayed. At concentrations of 0.32 to 0.43 mg/L (about a factor of 2 below the 96-hour LC₅₀), fish were lethargic. At levels of

≤0.1 mg/L, fish were hypersensitive over 4-day periods of exposure. This is reasonably consistent with the threshold for behavioral changes in rainbow trout for Garlon 4 of 0.6 mg/L. The corresponding threshold for behavioral changes to Garlon 3A was 200 mg/L, which is consistent with the relative acute lethal potencies of these two agents.

Garlon 3A and Garlon 4 have been specifically tested for malformations in the frog embryo teratogenesis assay, and no statistically significant effects were noted. On the basis of acute lethality, aquatic invertebrates appear to be about equally or somewhat less sensitive than fish to the various forms of triclopyr.

Triclopyr TEA is about equally toxic to both algae and macrophytes. As with toxicity to fish and invertebrates, triclopyr BEE is somewhat more toxic to both macrophytes and algae.

TCP (an environmental metabolite of tryclopyr) is substantially more toxic in fish than either triclopyr acid or triclopyr TEA, with acute toxicity similar to that of triclopyr BEE. An early life-stage study with TCP in rainbow trout yielded an NOEC of 0.0808 mg/L and an LOEC of 0.134 mg/L based on the most sensitive endpoint. However, estimated concentrations of TCP in surface water after the application of triclopyr at 1 lb/acre and chlorpyrifos at 1 lb/acre are well below a level of concern. Thus, the concern for TCP residues in surface water appears to be associated with high application rates of triclopyr rather than applications triclopyr and chlorpyrifos in the same area.

For terrestrial mammals, the central estimates of potential exposures do not exceed the level of concern for any exposure scenarios. At the upper range of exposures, potential exposures exceed a level of concern for large mammals and large birds consuming contaminated vegetation exclusively at the application site. The EPA similarly concludes that contaminated vegetation is the primary concern in the use of triclopyr and that high application rates will exceed the level of concern for both birds and mammals in longer-term exposure scenarios.

Effects on nontarget vegetation would be reduced for triclopyr TEA compared to triclopyr BEE, due to relative toxicities. At an application rate of 1 lb/acre, potentially damaging runoff from triclopyr TEA would be anticipated only at relatively high rainfall rates, while at 10 lb/acre, concerns would occur at annual rainfall rates as low as 20 in. per year. At an application rate of 1 lb/acre, concerns from triclopyr BEE runoff would occur at even modest rainfall rates of 20 to 25 in. per year due to its greater toxicity.

Off-site drift of triclopyr at an application rate of 1 lb/acre could produce potentially damaging exposures within about 100 ft of the application site. At the maximum application rate of 10 lb/acre, damaging drift could occur at distances of over 1,000 ft from the application site.

Risks to aquatic species are low from triclopyr TEA over the entire range of application rates considered. At the highest projected application rate, acute risks to aquatic plants from runoff into streams would just reach a level of concern. Acute exposures to aquatic plants in the application of triclopyr TEA directly to water for the control of submerged weeds would be below but near a level of concern.

Although triclopyr BEE is much more toxic to aquatic species than triclopyr TEA or triclopyr acid, projected levels of exposure are much less because of the rapid hydrolysis of triclopyr BEE to triclopyr acid and because of reduced runoff of triclopyr BEE due to its lower water solubility and higher affinity for soils. Nonetheless, triclopyr BEE is projected to be somewhat more hazardous when used near bodies of water where runoff to open water may occur.

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APPENDIX E

USFS SHASTA-TRINITY NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN POLICIES

LATE-SUCCESSIONAL RESERVES STANDARDS

Objectives – Late-Successional Reserves are to be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth-related species, including the northern spotted owl. These reserves are designed to maintain a functional, interacting, late-successional and old-growth forest ecosystem.

LATE-SUCCESSIONAL RESERVES GUIDELINES

1. The potential for benefit to species associated with late-successional forest conditions from salvage is greatest when stand-replacing events are involved. Salvage in disturbed sites of less than 10 acres is not appropriate because small forest openings are an important component of old-growth forests. In addition, salvage should occur only in stands where disturbance has reduced canopy closure to less than 40%, because stands with more closure are likely to provide some value for species associated with these forests.
2. Surviving trees will provide a significant residual of larger trees in the developing stand. In addition, defects caused by fire in residual trees may accelerate development of structural characteristics suitable for associated species. Also, those damaged trees that eventually die will provide additional snags. Consequently, all standing live trees should be retained, including those injured (e.g., scorched) but likely to survive. Inspection of the cambium layer can provide an indication of potential tree mortality.
3. Snags provide a variety of habitat benefits for a variety of wildlife species associated with late-successional forest. Accordingly, following a stand-replacing disturbance, management should focus on retaining snags that are likely to persist until late-successional conditions have developed and the new stand is again producing large snags. Late-successional conditions are not associated with stands less than 80 years old.
4. Following a stand-replacing disturbance, management should retain adequate quantities of coarse, woody debris in the new stand so that in the future, it will still contain amounts similar to naturally regenerated stands. The analysis that determines the amount of coarse woody debris to leave must account for the full period of time before the new stand begins to contribute coarse woody debris. As in the case of snags, province-level specifications must be provided for this guideline. Because coarse woody debris decay forest dynamics and site productivity undoubtedly will vary among provinces and forest types, the specifications also will vary.

Province-level plans will establish appropriate levels of coarse woody debris and decay rates to be used. Levels will be “typical” and will not require retention of all material where it is highly concentrated or too small to contribute to coarse woody debris over the long time frames discussed. This standard and guideline represents one item to be

considered and may indeed result in no salvage in low-density stands. As for other management activities, it is expected that salvage standards and guidelines will be refined through the implementation and adaptive management processes.

5. Some salvage that does not meet the preceding guidelines will be allowed when salvage is essential to reduce the future risk of fire or insect damage to late-successional forest conditions. It is important to understand that some risk associated with fire and insects is acceptable because they are natural forces influencing late-successional forest development. Consequently, salvage to reduce such risks should focus only on those areas where there is high risk of large-scale disturbance.
6. Removal of snags and logs may be necessary to reduce hazards to humans along roads and trails and in or adjacent to campgrounds. Where materials must be removed from the site, as in a campground or on a road, a salvage sale is appropriate. In other areas, such as along roads, leaving material on site should be considered. Also, material will be left where available coarse woody debris is inadequate.
7. Where green trees, snags, and logs are present following disturbance, the green-tree and snag guidelines will be applied first and completely satisfied, where possible. The biomass left in snags can be credited toward the amount of coarse woody debris biomass needed to achieve management objectives.
8. These basic guidelines may not be applicable after disturbances in younger stands because remnant coarse woody debris may be relatively small. In these cases, diameter and biomass retention guidelines should be developed consistent with the intention of achieving late-successional forest conditions.
9. Logs present on the forest floor before a disturbance event provide habitat benefits that are likely to continue. It seldom will be appropriate to remove them. Where these logs are in an advanced state of decay, they will not be credited toward objectives for coarse woody debris retention developed after a disturbance event. Advanced state of decay should be defined as logs not expected to persist to the time when the new stand begins producing coarse woody debris.
10. The coarse woody debris retained should approximate the species composition of the original stand to help replicate preexisting suitable habitat conditions.
11. Some deviation from these general guidelines may be allowed to provide reasonable access to salvage sites and feasible logging operations. Such deviation should occur on as small a portion of the area as possible and should not result in violation of the basic intent that late-successional forest habitat (or the development of such habitat in the future) not be impaired throughout the area. While exceptions to the guidelines may be allowed to provide access and operability, some salvage opportunities will undoubtedly be foregone because of access, feasibility, and safety concerns.

In addition, the Land and Resource Management Plan (LRMP) also includes a specific guideline for rights-of-way (ROWs), contracted rights, easements, and special use permits. The LRMP states:

Access to non-Federal lands through Late-Successional Reserves will be considered and existing rights-of-way agreements, contracted rights, easements, and special use permits in Late-Successional Reserves will be recognized as valid uses. New access proposals may require mitigation measures to reduce adverse effects on Late-Successional Reserves. In these cases, alternate routes that avoid late-successional habitat should be considered. If roads must be routed through a reserve, they will be designed and located to have the least impact on late-successional habitat.

ROADED RECREATION OBJECTIVE

The purpose of the Roaded Recreation Prescription is to provide for an area where there are moderated evidences of the sights and sounds of humans. Modifications are evident and may appear moderate to observers in the area but will be unnoticed or visually subordinate from sensitive travel routes. The prescription emphasizes recreational opportunities associated with developed road systems and dispersed and developed camp sites. Fish and wildlife management, which supports the recreational use of wildlife species (hunting, fishing, and viewing), is also emphasized. The emphasis of vegetation management activities will be to meet recreation, visual, and wildlife objectives while maintaining healthy and vigorous ecosystems.

As part of the standards and guidelines for Roaded Recreation areas, the LRMP also includes a description of areas where the Roaded Recreation Prescription is to be applied. The description reads:

Resource activities and modifications are evident, but they are in harmony with the natural environment setting. A moderate to high frequency of user contact occurs on roads and a low to moderate frequency occurs on trails and away from roads. On-site user controls are noticeable, but they harmonize with the natural environment. Typical activities include: hiking, cross-country skiing, downhill skiing, power boating, snowmobiling, touring, resort-supported recreation, trailer camping, hunting, fishing, and wildlife viewing.

The Roaded Recreation Prescription also applies to designated Recreation segments of Wild and Scenic Rivers. Areas adjacent to these rivers or sections of rivers that are readily accessible by road or railroad, and may have undergone some development in the past, are also included. This is also the primary prescription for the Shasta and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area and subject to the Trinity River Wild and Scenic Implementation Guide of 1996.

ROADED RECREATION GUIDELINES

1. Roads and trails should be located, designed, constructed, and maintained so that they are compatible with Roaded Natural Recreation Opportunity Spectrum (ROS) activities.
2. Wildfire suppression tactics will favor use of low-impact techniques.

3. Pre-attack facilities should be located where there is a minimum of conflict with recreation activities.
4. Treatment of fuels created by project activities will be determined during ecosystem planning.
5. Provide information and interpretive services to direct visitors to their recreation destinations. Acquaint the visiting public with the significant historical and cultural features, plants, wildlife, and management programs in the Forests.
6. Locate cross-country skiing developments where terrain and snow conditions are highly suitable.
7. Designate suitable trails and areas for off-highway vehicle (OHV) use. Such use should be located and scheduled to minimize conflicts with other recreation use and deer winter range. Refer to the OHV Management Plan map for specific use areas.
8. Plan, design, and implement management activities that are compatible with Roded Natural ROS guidelines.
9. Identify and develop interpretive publications and exhibits which explain recreation features, management practices, and benefits. Special emphasis should be on nationally significant recreation rivers and areas. Coordinate the placement of interpretive services with developed site planning, construction, rehabilitation, or major site maintenance.
10. Timber management activities will be designed to meet recreation, visual, and ecosystem management objectives.
11. Timber yields will result from activities required to attain the desired future condition of the landscape.
12. Disperse openings created by timber harvesting throughout project areas. The size of openings will average 5 acres or less.
13. Manage activities and resources to meet adopted Visual Quality Objectives (VQOs) of retention, partial retention, or modification as indicated on the adopted VQO map. Unseen areas within any mapped VQO may be managed for modification except in recreation river corridors.
14. Management activities that are seen from developed recreation sites will meet a VQO of retention in the foreground and partial retention in the middle ground.
15. Manage hardwoods for sustainability on the landscape basis, consistent with desired future ecosystem conditions.
16. Maintain an average of 10 tons of unburned dead/down material per acre on slopes less than 40%. Preference is to have a portion of this tonnage in large material (i.e., 4 to 6 logs more than 10 ft long at the largest diameter available). Where feasible, maintain the same amount on slopes greater than 40%.

RIPARIAN RESERVES

Within the LRMP, there are Riparian Reserves that are identified but are not a mapped resource. These reserves are specified as five categories of streams or water bodies:

1. **Fish-bearing Streams** – Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to one of the following, whichever distance is greatest: the top of the inner gorge, the outer edges of the 100-year floodplain, the outer edges of riparian vegetation, a distance equal to the height of two site-potential trees,^a or the 3,000-ft slope distance (600 ft total, including both sides of the stream channel).
2. **Permanently Flowing, Non-fish-bearing Streams** – Riparian Reserves consist of the stream and the area on each side of the stream channel extending from the edges of the active stream channel to one of the following, whichever distance is greatest: the top of the inner gorge, the outer edges of riparian vegetation, a distance equal to the height of one site-potential tree, or the 150-ft slope distance (300 ft total, including both sides of the stream channel).
3. **Constructed Ponds and Reservoirs and Wetlands Greater Than 1 Acre** – Riparian Reserves consist of the body of water or wetland and the following, whichever is greatest: the area to the outer edges of the riparian vegetation, a distance equal to the height of one site-potential tree, or the 150-ft slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs.
4. **Lakes and Natural Ponds** – Riparian Reserves consist of the body of water and the following, whichever is greatest: the area to the outer edges of the riparian vegetation, the extent of seasonally saturated soil, the extent of unstable and potentially unstable areas; the distance equal to the height of two-site potential trees, or the 300-ft slope distance.
5. **Seasonally Flowing or Intermittent Streams,^b Wetlands Less Than 1 Acre, and Unstable and Potentially Unstable Areas** – This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserves must:
 - Include the extent of unstable and potentially unstable areas (including earthflows),
 - Include the stream channel and extend to the top of the inner gorge,
 - Include the stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and
 - Extend from the edges of the stream channel to a distance equal to the height of one site-potential tree or the 100-ft slope distance, whichever is greatest.

Since Riparian Reserves are unmapped resources, many of the standards and guidelines were developed to identify (on the basis of the categories) as well as protect these resources. The standards were developed to carry out the Aquatic Conservation Objectives listed below.

^a A site-potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class.

^b Like any nonpermanent flowing drainage feature, intermittent streams have a definable channel and evidence of annual scour or deposition. This definition includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.

AQUATIC CONSERVATION STRATEGY (ACS) OBJECTIVES

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.
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 refuges. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life-history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore the 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 the survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
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.
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.
7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and 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.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

From these ACS objectives, the LRMP has developed an extensive number of standards and guidelines associated with the management of Riparian Reserve and Key Watershed areas. Standards and guidelines for the riparian areas of the project would include the general rules that prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the ACS objectives. Since the development of the project will either widen existing ROWs or construct new ROWs, it would result in harvesting of timber and development or enhancement of roads in the project area. The standards and guidelines for timber management, roads management, and general riparian area management are listed below.

I. Timber Management

- a. Prohibit timber harvest, including fuelwood cutting, in Riparian Reserves, except as described below. Riparian Reserve acres shall not be included in calculation of the timber base.
 - 1. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy Objectives.
 - 2. Salvage trees only when watershed analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy Objectives are not adversely affected.
 - 3. Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy Objectives.

II. Roads Management

- a. Cooperate with Federal, state, and county agencies to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy Objectives.
- b. For each existing or planned road, meet Aquatic Conservation Strategy Objectives by:
 - 1. Minimizing road and landing locations in Riparian Reserves.
 - 2. Completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
 - 3. Preparing road design criteria, elements, and standards that govern construction and reconstruction.
 - 4. Preparing operation and maintenance criteria that govern road operation, maintenance, and management.
 - 5. Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
 - 6. Restricting sidecasting as necessary to prevent the introduction of sediment to streams.
 - 7. Avoiding wetlands entirely when constructing new roads.
- c. Determine the influence of each road on the Aquatic Conservation Strategy Objectives through watershed analysis. Meet Aquatic Conservation Strategy Objectives by:
 - 1. Reconstructing roads and associated drainage features that pose a substantial risk.
 - 2. Prioritizing reconstruction on the basis of current and potential impact to riparian resources and the ecological value of the riparian resources affected.
 - 3. Closing and stabilizing or obliterating and stabilizing roads on the basis of the ongoing and potential effects to Aquatic Conservation Strategy Objectives and considering short-term and long-term transportation needs.

- d. New culverts, bridges, and other stream crossings shall be constructed, and existing culverts, bridges, and other stream crossings that are determined to pose a substantial risk to riparian conditions will be improved to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
- e. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping will increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.
- f. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.
- g. Develop and implement a Road Management Plan or a Transportation Management Plan that will meet Aquatic Conservation Strategy Objectives. A minimum, this plan shall include provisions for the following:
 - 1. Inspections and maintenance during storm events.
 - 2. Inspections and maintenance after storm events.
 - 3. Road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
 - 4. Traffic regulations during wet periods to prevent damage to riparian resources.
 - 5. Determination of the purpose of each road by developing the Road Management Objective.

III. General Riparian Area Management

- a. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.
- b. Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.
- c. Herbicides, insecticides, other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy Objectives.
- d. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.

APPENDIX F

**CORRESPONDENCE RELATED TO
CONSULTATIONS AND COORDINATION**

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**ENDANGERED SPECIES ACT
SECTION 7
NATIONAL MARINE FISHERIES SERVICE**

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JUN 26 2007

Ms. Irma Lagomarsino
Arcata Area Office Supervisor
National Oceanographic and Atmospheric Administration
National Marine Fisheries Service
Southwest Region Arcata Area Office
1655 Heindon Road
Arcata, California 95521

Dear Ms. Lagomarsino:

Subject: Request for Informal Consultation under Section 7 of the Endangered Species Act and Essential Fish Habitat Consultation for the Trinity Public Utility District Direct Interconnection Project, Trinity County. Reference: 151422SWR2005AR00251:FR

The Western Area Power Administration (Western), is submitting the attached Biological Assessment (BA) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA)¹ to the National Marine Fisheries Service (NMFS). This BA describes and analyzes the effects of the Trinity Public Utility District (Trinity PUD) Direct Interconnection Project (Project) on threatened Southern Oregon/Northern California (SONCC) Coho Salmon (*Oncorhynchus kisutch*) and its designated critical habitat. In addition, this document includes the effects on essential fish habitat (EFH) as required under the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996. A separate BA addresses listed species under the jurisdiction of the U.S. Fish and Wildlife Service.

Western has prepared a Draft Environmental Impact Statement (DEIS), which describes the environmental impacts of proposed transmission line additions and improvements in the Trinity PUD. The Trinity PUD is a small utility district in Northern California serving approximately 16,000 consumers in a 2,200 square mile area. The Project is located entirely within Trinity County, California. The Trinity PUD is directly connected to the California Independent System Operator (ISO)-controlled electrical grid by 60-kilovolt (kV) transmission facilities. Pacific Gas and Electric (PG&E) owns and maintains the 60-kV transmission line. Although transmitted through the PG&E system, Trinity PUD receives 100 percent of its power from Western.

¹ Implementing regulations at 50 CFR § 402.12.

Listed Resources

SONCC Coho Salmon: Threatened. NMFS listed SONCC Coho Salmon (*Oncorhynchus kisutch*) as threatened on May 6, 1997, under the ESA (62 FR 24588) and reaffirmed that listing on June 28, 2005 (70 FR 37160). Final revised protective regulations were issued for SONCC Coho Salmon on June 28, 2005 (70 FR 37160).

NMFS published a final rule designating critical habitat for SONCC Coho Salmon effective June 4, 1999, which encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon inclusive.

Effects of the Proposed Action

The proposed action is located within the Klamath River Basin, which historically supported abundant Coho Salmon runs. The Project would require crossing small streams and dry washes with the transmission line and/or access roads. Segment 1 of the Project would cross the Trinity River below Trinity Dam and again near Lewiston Dam below the Fish Hatchery. These crossings would consist of conductors spanning the river to structures set well back from the banks on either side adjacent to the road. The crossing below Trinity Dam would replace a similar existing crossing. Segment 3 of the Project would cross Rush Creek and Little Browns Creek. Coho Salmon are known to inhabit the Trinity River below Lewiston Dam, Little Browns Creek and Rush Creek. These populations are found sporadically in response to favorable tributary migration conditions.

Roads crossing streams below Lewiston Dam that are hydrologically connected to SONCC Coho habitat will utilize existing road crossings (e.g., bridges or culverts). Existing roads would be used to cross all of the streams and most or all of the dry washes. Most of the dry wash crossings are drive-through, although a few low-flow streams may be drive-through above Lewiston Dam (hydrologically disconnected from SONCC Coho habitat). Rush Creek would be crossed using an existing bridge. Little Browns Creek would be crossed on an existing county road with culverts. The existing road system along Segment 3, from the three way switch near mile 6 to the proposed Weaverville Switchyard, has culverts in place at intermittent stream or dry wash crossings. On the eastern half of the Project (i.e., Segment 1 above Lewiston Dam), local rocks would be hand-placed in the intermittent streams or dry washes where needed to improve the low water crossing to allow passage of construction equipment and vehicles. No culverts would be installed, and no soil fill would be placed in the crossings. All roads used on Sierra Pacific Industries land will be graveled, while slope approaches to drainage crossing on Shasta Trinity National Forest will be graveled. After the construction period, use of the crossings is anticipated to be once per year for routine inspection and maintenance, which would likely be in the winter via snow cat.

Mitigation measures include actions to minimize disturbance to soils and to minimize sediment transport to streams and rivers which may contain fish, critical habitat, or EFH (see DEIS Table 2-2).

Determinations

Based upon the best available scientific information and the analyses in the DEIS and BA, Western requests that you concur with the following determinations:

- The proposed action may affect, but is not likely to adversely affect, SONCC Coho Salmon due to the limited nature of the action and mitigation measures to avoid impacts to riparian areas and stream channels.
- The proposed action is not likely to adversely affect SONCC Coho Salmon designated critical habitat due to the limited nature of the action and mitigation measures to avoid impacts to riparian areas and stream channels.
- The proposed action is not likely to adversely affect EFH for Pacific Salmon including spawning, rearing, and migratory EFH functions.

If you have any questions regarding this BA, please contact Mr. Steve Tuggle at 916-353-4549.

Thank you.

Sincerely,

CHORIE JOHNSTON-WALDEAR


Stephen Tuggle
Natural Resources Manager

Enclosure

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**Biological Assessment
Trinity Public Utility District Direct Interconnection Project
Western Area Power Administration–Sierra Nevada Region**

1. Introduction

The Western Area Power Administration (Western), is submitting this Biological Assessment (BA) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA)¹ to the National Marine Fisheries Service (NMFS). This BA describes and analyzes the effects of the Trinity Public Utility District (Trinity PUD) Direct Interconnection Project (Project) on threatened southern Oregon/northern California (SONCC) Coho Salmon (*Oncorhynchus kisutch*) and its designated critical habitat. In addition, this document includes the effects to Essential Fish Habitat (EFH) as required under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (SFA)(Public Law 104-267). A separate BA addresses listed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS).

Western has prepared a Draft Environmental Impact Statement (DEIS), which describes the environmental impacts of proposed transmission line (T-line) additions and improvements in the Trinity PUD. The Trinity PUD is a small utility district in northern California serving approximately 16,000 consumers in a 2,200 square mile area. The Project is located entirely within Trinity County, California. The Trinity PUD is directly connected to the California Independent System Operator (ISO)-controlled electrical grid by 60-kilovolt (kV) transmission facilities. Pacific Gas and Electric (PG&E) owns and maintains the 60-kV T-line. Although transmitted through the PG&E system, Trinity PUD receives 100 percent of its power from Western.

Consumers in the Trinity PUD service area routinely experience nearly 20,000 consumer hours in outages per year. In the winter, many of the outages last 3- to 4- days. PG&E has had a difficult time restoring service due to the remote location and rough terrain. Trinity PUD and its customers need reliable electric service as provided for in the Trinity River Division Act of August 12, 1955. The purpose of the proposed action is to improve system reliability by providing a shorter, new direct interconnection with Western's transmission system at Trinity Power Plant. In addition, Trinity PUD will be able to respond quicker during outages than has previously occurred due to the close proximity of the Weaverville maintenance facility.

1.1 Consultation History

- April 20, 2005: Ms. Loreen McMahon (Western), requested from NMFS a list of species which might be affected by the Project.
- May 2, 2005: Ms. Irma Lagomarsino (NMFS), responded in a letter with a list of species which might be affected by the Project (Lagomarsino 2005).
- September 15, 2005: Mr. Ron Clementsen, (Forest Program Leader, USFWS, Red Bluff, Field Office), Ms. Kelly Wolcott (Wildlife Program Coordinator, Shasta-Trinity National Forest (STNF), Redding, California), Ms. Ami Goerdts and Mr. John Bridges (Biologists, Western, Folsom, California, and Lakewood, Colorado, respectively) visited the Project area to discuss the Project and the needs of the three Federal agencies involved.

¹ Implementing regulations at 50 CFR § 402.12.

- October 6, 2005: The STNF accessed the most recent list of endangered, threatened, proposed, and candidate species that may occur in the Project area (i.e., Trinity County) from the NMFS web site (<http://www.nwr.noaa.gov>).
- September 6, 2005: Preparation of the Biological Assessment began.
- July 11, 2006: Another meeting was held to review field conditions, discuss the status of the Project, changes in the Project description, level of National Environmental Policy Act (NEPA) documentation, and staff assignments. The participants included Mr. Ron Clementsen and Ms. Sheli Wingo (USFWS), Ms. Kelly Wolcott, Mr. Tom Quinn and Ms. Becky Rogers (STNF), and Mr. John Bridges (Western).
- July 21, 2006: A Draft BA was provided to the USFWS for review.
- October 30, 2006: A field review of watershed crossings was held with Mr. Keith Paul (USFWS), Mr. Rick Rogers (NMFS), and Ms. Ami Goerd, Mr. John Bridges, Mr. Gary Burton and Mr. Mark Wieringa (Western).
- February 2007: DEIS on the Project completed.
- June 2007: The draft BA was sent to NMFS for review and comment.

2. Description of the Proposed Action

The Project is located in Trinity County, California, in Sections 22, 27, and 34, T. 34 N., R. 8 W.; Sections 3, 4, 7, 8, 9, 17, T. 33 N, R. 8 W.; and Sections 1, 2, 10, 11, 15, 19, 20, 21, 22, T. 33 N., R. 9 W., Mt. Diablo Principal Meridian (see DEIS Figures 2-1 and 2-2; attached here as Figures 1 and 2).

Western's Sierra Nevada Regional Office is proposing to construct, own, operate and maintain the Trinity PUD Direct Interconnection Project. The proposed action would consist of a single-circuit, three-phase, 60-kV T-line on single wood pole structures with aluminum conductor steel reinforced conductors arranged in a horizontal or triangular configuration. A combination fiber optic cable and ground wire would be strung overhead to provide communications capability and lightning protection.

Approximately 264 structures would be needed. About 11 of these would be three-pole turning structures with a few self-supporting steel poles. The turning structures, and approximately 95 additional single poles, would be guyed with wire cable to anchors in the ground. Some anchors would fall outside of the normal 80-foot right-of-way (ROW); in those locations additional clearing would be required, and additional ROW needs determined and obtained. While clearing could be needed for the anchors, no logging would occur in these guy pockets. The anchors would consist of steel screw anchors in soil, an 8-foot anchor rod with plate in fractured rock, or a grouted rod in solid rock. Anchors would be buried approximately 6 feet in the ground. Anchor holes would be augured where vehicle access is possible, otherwise they will be drilled with hand power augers, or hand-dug.

Western would remove the existing Trinity-Lewiston 12-kV distribution line (Trinity PUD line) and expand the ROW from 20 feet to 80 feet. This additional 60 feet is necessary to comply with the National Electric Safety Code for 60-kV T-lines. The entire 80-foot wide ROW would be cleared of all trees to provide a safe work environment for removal of the existing line and construction of the new line. Low-growing trees, shrubs, and ground vegetation would be left in place to the extent possible. Where drainages and ravines would be spanned, the additional conductor clearance would allow Western to leave larger vegetation in place and minimize disturbance in these locations. Additionally,

the removal of trees outside the ROW that could fall into the line (danger trees) would be necessary. The new line would utilize the expanded ROW from Trinity Dam down river approximately 5.3 miles towards Lewiston, California.

In the southeast corner of Section 7, T. 33 N., R. 8 W., a radial tap line would be built on a new ROW to the existing Trinity PUD Lewiston Substation. This approximately 1-mile-long line would provide a direct path for electricity to go into the Lewiston Substation. A steel pole with a three-way switch would be installed near mile 6.

From this point to the proposed new Weaverville Switchyard, Western would acquire a new 80-foot wide ROW to build the remaining portion of the new 60-kV T-line. This section of the proposed Project would be approximately 9 miles long. The ROW for the line would be cleared as described above. The Weaverville Switchyard would be a 90x100-foot facility located near Highway 299, and accessed by an abandoned segment of that state highway. A fiber optics cable would be added to the proposed T-line's ground wire to improve the control and protection of the newly installed system.

2.1 Access Road Improvement and Construction

Interdependent actions would include new or upgraded access roads. Upgrading existing access roads involves blading and/or placing rock and/or gravel within the confines of the disturbed roadbed. There are approximately 9.5 miles of existing access roads on the STNF, associated with the existing 12-kv distribution line. Of these, about 3.0 miles of access road would need improvement, especially in areas approaching drainage crossings. Drainage crossings would be accomplished by hand-placing local rock in the roadbed. No culverts would be emplaced due to risk of plugging and blow-out, and no soil fill is anticipated. Approximately 1.0 mile of new access road on the STNF would be constructed. Off the STNF, roads on land held by Sierra Pacific Industries (SPI), would be graveled (about 8.7 miles of roads would need to be improved). The entire proposed action would require about 2.0 miles of new access road to be constructed, all short dead-end spurs from existing access roads to pole locations. These new spur roads would be left in place, but not permanently maintained. In other words, the grading would remain, but they would be allowed to revegetate and may be blocked at the request of the land manager/owner.

2.2 Staging, Laydown, Tensioning and Guy-wire Areas

Depending on the type of construction (i.e., helicopter, ground, or mixed) another interdependent action would include clearing construction platforms needed for assembly and/or erection of the new structures. Six helipad/staging areas, totaling nearly 22 acres, would be set up outside of the ROW. There would also be several log decks adjacent to access roads where logs would be yarded for loading on trucks for transport to the mill.

In addition to the 80-foot wide ROW, pull sites, to tension the conductors and the overhead ground wire, would call for use of about six acres outside of the ROW. On the STNF, these locations would be the same as used for the construction of the existing 12-kV Trinity line. Also, due to the steepness of the terrain in the Project area, many structures would require two to eight guys/anchors to keep the poles stable. These sites would require an additional 16 acres of some clearing, but no logging.

2.3 Action Area

The Project area is located entirely within Trinity County, California. The action consists of a ROW 80 feet wide by 16 miles long with up to 3 miles of new access road construction and approximately 11.7 miles or less of existing access road upgrade. SONCC Coho Salmon have access to the Trinity River below Lewiston Dam, Rush Creek, and Little Browns Creek²; each stream contains designated critical habitat. Although no construction activities would occur within these streams, approximately 10 acres of nearby land may be disturbed (see DEIS Figure 2-2). Table 3.2-8 (DEIS) describes the location of poles and their estimated disturbance acreage.

2.4 Project Mitigation Measures

The following interdependent actions would reduce or avoid impacts to forest resources, particularly wildlife resources including fish³:

- Construction of the T-line across Trinity River, Little Browns, and Rush Creek Crossings would be conducted during low flow periods in the summer and would not directly affect stream channels.
- Vehicle operation off the ROW shall be prohibited or limited to existing roads.
- To the extent possible, grading and grubbing of low growing vegetation cover shall be avoided to help stabilize soils and any disturbed areas would be reseeded with regionally native species.
- Silt fences would be placed on the downstream sides of all tower pole auguring locations.
- Structures would be placed to avoid sensitive features such as riparian areas and water courses, providing it does not interfere with human safety or line reliability.
- Selective thinning would occur in the Riparian Reserves to limit impacts within these areas. Thinning would focus on that needed for worker safety and line reliability.
- Prior to entering the Project area, all personnel would be required to go through safety and environmental training. This training would deal with environmental laws, the species of concern, the reasons they are protected, and measures to ensure the safety of workers and protected biological resources.

3. Baseline Conditions

The upper Trinity River watershed provides habitat for several species of fish. Some of the more common fishes found in this watershed include fall-run Chinook Salmon (*Oncorhynchus tshawytscha*), SONCC Coho Salmon (*Oncorhynchus kisutch*), winter-run Steelhead (*O. mykiss*), Pacific Lamprey (*Lampetra tridentate*), Brown Trout (*Salmo trutta*), Speckled Dace (*Rhinichthys osculus*), Marbled Sculpin (*Cottus klamathensis*), Threespine Stickleback (*Gasterosteus aculeatus*), Klamath Smallscale

² Under the Browns Project, the U.S. Department of Agriculture's Forest Service will be removing a culvert on Little Browns Creek during 2007, which will allow SONCC Coho Salmon access to habitat above this point during high stream flows in the winter (USDA-Forest Service 2005). A biological opinion has been prepared by NMFS and incidental take has been authorize for the Browns Project.

³ A complete list of mitigation measures can be found in the DEIS at Table 2-2 (Proposed Project Mitigation Measures).

Sucker (*Catostomus rimiculus*), and Klamath River Lamprey (*Lampetra similes*). Fisheries management in this watershed is focused on the anadromous fish species. The habitats and fisheries of the major streams in the area are described below.

The Trinity River is a major tributary to the Lower Klamath River. Both the Klamath and Trinity Rivers previously supported an anadromous fishery (e.g., fish that live to adulthood in salt water and return to fresh water to breed). However, dams, diversion, hydroelectric projects, past mining, timber harvest practices, and road building have all contributed to sedimentation, reduced flow, and degraded water quality, which have reduced anadromous fish's ability to move between saltwater and fresh water habitats. According to the Klamath River Basin Fishery Resources Restoration Act, the Klamath-Trinity River fall Chinook Salmon populations have declined by approximately 80 percent, and steelhead trout also have undergone significant reductions.

The Trinity River Restoration Program (TRRP) was initiated in 1984 under PL 98-541 to restore and maintain the fish and wildlife stocks of the Trinity River Basin to levels that existed just prior to construction of the Trinity River Division. The Central Valley Project Improvement Act of 1992 (PL 102-575) further supported restoration objectives and established completion dates for the program documents. Under the TRRP, the primary objective is to restore the fisheries in the Trinity River Basin to the level that existed prior to the construction of the Trinity River Diversion of the Central Valley Project. The Trinity River contains designated critical habitat for SONCC Coho Salmon.

Anadromous fish have access to approximately 9.5 miles of the Rush Creek stream before a steep bedrock fall blocks passage (TRRP 2007). Chinook Salmon are found only during years of early fall rain that creates suitable migration conditions. Low fall flows generally prevent anadromous fishes from using Rush Creek until late November (TRRP 2007). Accessible segments of Rush Creek contain designated critical habitat for SONCC Coho Salmon.

Little Browns Creek has approximately 0.9 mile of habitat accessible to anadromous fishes on STNF lands (TRRP 2007). Culverts on County Road 232 present a complete barrier to migrating fishes (TRRP 2007). Accessible segments of Little Browns Creek contain designated critical habitat for SONCC Coho Salmon.

4. Listed Species Potentially Affected by the Proposed Action

This chapter provides a description of each listed species potentially affected by the proposed action, ESA status, and life history. Of the various fish species found in the action area, only SONCC Coho Salmon are federally listed under the ESA. The upper Klamath-Trinity Rivers Chinook Salmon evolutionary significant unit (ESU), southern Oregon and northern California Coast Chinook, and Klamath Mountains Province Steelhead ESU were found to be not warranted for listing (Table 1).

4.1 Biological Surveys

Western conducted field surveys of the existing and proposed T-line routes. This survey area included 48.3 acres of Bureau of Land Management (BLM) lands, 141.9 acres of STNF lands, and 201.5 acres of private ownership, including SPI.

Western hired contractor biologists to identify and locate wildlife and plant species of concern in the Project area. The purpose of the biological field survey was to: (1) identify and record sensitive biological resources and habitat types within the project area; (2) assess the impacts to sensitive biological resources; and (3) identify measures to avoid or minimize impacts to sensitive biological

resources. Information from this Biological Report has been used to prepare the BA for federally endangered, threatened, proposed and candidate species and designated critical habitat.

4.2 Species Status and Critical Habitat

SONCC Coho Salmon: Threatened

NMFS listed SONCC Coho Salmon (*Oncorhynchus kisutch*) as threatened on May 6, 1997, under the ESA (62 FR 24588) and reaffirmed that listing on June 28, 2005 (70 FR 37160). Final revised protective regulations were issued for SONCC Coho Salmon on June 28, 2005 (70 FR 37160). This ESU of Coho Salmon inhabits coastal rivers and streams between Cape Blanco in southern Oregon to Punta Gorda in northern California. Most of the remaining natural production in this Coho Salmon ESU takes place in the Rogue, Klamath, Trinity, and Eel River Basins (Figure 3). The Rogue River Basin and Klamath River Basin contain naturally reproducing populations of this Coho Salmon ESU.

NMFS published a final rule designating critical habitat for SONCC Coho Salmon effective June 4, 1999, which encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon inclusive. Accessible reaches are those within the historical range of the ESU that can still be occupied by any life stage of Coho Salmon (64 FR 24049). Inaccessible reaches are those above specific dams as identified in Table 6 of the Federal Register (Iron Gate Dam, Emigrant Dam and Agate Dam) or above longstanding naturally impassable barriers (natural waterfalls in existence for at least several hundred years).

Coho Salmon generally have a 3-year life cycle that begins and ends in fresh water. Juveniles spend the first year in fresh water and then migrate to salt water where they live for about 2 years before returning to spawn in their natal stream. Migration typically begins in late summer and fall; they spawn by mid-winter and then die.

Historical abundance of the SONCC Coho Salmon ESU has been estimated at 150,000. Recent mean abundance is estimated at 5,170 and is the highest since 1980 (NMFS 2007). The overall trend within this ESU since the species was listed in 1997 shows that the population abundance and distribution have remained unchanged. The natural Coho Salmon populations are depressed throughout the ESU. Based on an updated status review conducted by the NMFS Biological Review Team (BRT) in 2005, Coho Salmon populations occupy about 50 percent of their historic range (Good et al. 2005). Natural production, particularly in the Trinity River, appears to be very low and potentially masked by hatchery production. The BRT concluded that hatchery fish, and progeny of hatchery fish, constitute the majority of production in the Trinity River and may be a significant concern in parts of the Klamath and Rogue systems as well.

The SONCC Coho Salmon ESU declined in abundance over the past several decades as a result of loss, damage, or change to the natural environment. Water diversions for agriculture, flood control, domestic, and hydropower purposes have greatly reduced or eliminated historically accessible habitat and degraded the remaining habitat. Forestry, agriculture, mining, and urbanization have degraded, simplified, and fragmented habitat. The destruction or modification of estuarine areas has resulted in the loss of important rearing and migration habitats. Oregon wetlands are estimated to have diminished by one-third, and California wetlands by over 80 percent. Habitat fragmentation and loss of habitat complexity have also contributed to the decline of this ESU. Sedimentation from historic and current extensive and intensive land use activities is recognized as a primary cause of habitat degradation throughout the range of this ESU. Most of the primary producing rivers in the range of the ESU were designated as impaired (primarily due to sediment and water temperature) under the Clean Water Act (CWA) by the U.S. Environmental Protection Agency (EPA) in the 1990s.

Designated Critical Habitat is defined to include all river reaches accessible to listed Coho Salmon between Capa Blanco, Oregon, and Punta Gorda, California. Critical Habitat in the proposed Project area consists of the water, substrate and adjacent riparian zone of estuarine, and riverine reaches (including off-channel habitats), in the Trinity River hydrologic unit within Trinity County. Accessible reaches are those within the historical range of the ESU that can still be occupied by any life stage of Coho Salmon. Inaccessible reaches are defined as those above Lewiston Dam or above longstanding, naturally impassable barriers (e.g., natural waterfalls in existence for at least several hundred years). It is commonly assumed that there is little production of wild Coho Salmon in the Trinity River system (NMFS 2005). Additionally, it appears that a significant fraction of the naturally produced fish is likely the progeny of hatchery strays (Sinnen 2002).

5. Effects of the Proposed Action

The proposed action is located within the Klamath River Basin, which historically supported abundant Coho Salmon runs. The Project would require crossing small streams and dry washes with the T-line and/or access roads (see Project maps at Figures 1 and 2). Segment 1 of the Project would cross the Trinity River below Trinity Dam and again near Lewiston Dam below the Fish Hatchery. These crossings would consist of conductors spanning the river to structures set well back from the banks on either side. The crossing below Trinity Dam would replace a similar existing crossing. Segment 3 of the Project would cross Rush Creek and Little Browns Creek. Coho Salmon are known to inhabit the Trinity River below Lewiston Dam, Little Browns Creek, and Rush Creek. These populations are found sporadically in response to favorable tributary migration conditions. Impacts of the Project above Lewiston Dam should have no effect on SONCC Coho Salmon because disturbed sediment would settle out in Lewiston Lake, above SONCC Coho habitat.

Roads crossing streams below Lewiston Dam that are hydrologically connected to SONCC Coho habitat will utilize existing road crossings (e.g., bridges or culverts). Existing roads would be used to cross all of the streams and most or all of the dry washes. Most of the dry wash crossings are drive-through, although a few low-flow streams may be drive-through above Lewiston Dam (hydrologically disconnected from SONCC Coho habitat). Rush Creek would be crossed using an existing bridge. Little Browns Creek would be crossed on an existing county road with culverts. The existing road system along Segment 3, from the three-way switch near mile 6 to the proposed Weaverville Switchyard, has culverts in place at intermittent stream or dry wash crossings. On the eastern half of the Project (i.e., Segment 1 above Lewiston Dam), local rocks would be hand-placed in the intermittent streams or dry washes where needed to improve the low water crossing to allow passage of construction equipment and vehicles. No culverts would be installed, and no soil fill would be placed in the crossings. All roads used on SPI land will be graveled, while slope approaches to drainage crossing on STNF will be graveled. After the construction period, use of the crossings is anticipated to be once per year for routine inspection and maintenance, which would likely be in the winter via snow cat.

5.1 Direct Effects (e.g., Mortality, Harm, Harass, Failed Breeding Attempts, Displacement)

No direct impacts to SONCC Coho Salmon or designated critical habitat would be expected because none of the proposed work would be carried out in SONCC Coho accessible streams. Equipment would bridge accessible streams and no impacts to the stream channels are expected. Some intermittent and low-flow streams would be crossed and modified on the STNF (with the addition of native rock), but these are not accessible and no direct effects to Coho Salmon would be likely.

5.2 Indirect Effects (e.g., Habitat)

The proposed action would disturb soils adjacent to SONCC Coho habitat, therefore indirect impacts are possible. Although no construction activities would occur in Coho-accessible streams, the disturbance to approximately 10 acres could result in short-term increases in sedimentation and turbidity in the downstream reaches of the streams and tributaries traversed by the Project. Summer construction to avoid the spawning season, the use of sediment fences, and implementation of the Riparian Reserve limits of disturbance standards would reduce impacts to an insignificant level. Also, much of the roads used below Lewiston Dam would be graveled, which would reduce dust and sedimentation from runoff. Special care would be taken crossing the Trinity River below Lewiston Lake to avoid impacts by placing poles as far from the river as possible, and immediately adjacent to existing roads, to minimize disturbance to vegetation⁴.

5.3 Essential Fish Habitat

The MSA, as amended by the SFA, established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. The MSA requires Federal agencies to consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (MSA § 305(b)(2)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.110). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

A description of the action is found in Section 2, and the likely effects on SONCC Coho and designated critical habitat is found in Section 5 above. The Project would have no significant impact on EFH streams, and no significant indirect impacts are anticipated. Mitigation measures would include actions to minimize disturbance to soils and to minimize sediment transport to streams and rivers, which may contain EFH (see DEIS Table 2-2).

6. Determinations

The proposed action may affect, but is not likely to adversely affect, SONCC Coho Salmon due to the limited nature of the action and mitigation measures to avoid impacts to riparian areas and stream channels.

⁴ On October 30, 2006, a field review of watershed crossings was held with Mr. Keith Paul (Service), Mr. Rick Rogers (NMFS), Ms. Ami Goerdt, Mr. John Bridges, Mr. Gary Burton, and Mr. Mark Wieringa (Western). Special consideration was taken regarding the Trinity River crossing below Lewiston Lake. Based on this discussion, Western believes that the construction of this crossing can be accomplished with no impact to the river channel and negligible impacts to surrounding lands and vegetation.

The proposed action is not likely to adversely affect SONCC Coho Salmon designated critical habitat due to the limited nature of the action and mitigation measures to avoid impacts to riparian areas and stream channels.

The proposed action is not likely to adversely affect EFH for Pacific Salmon including spawning, rearing, and migratory EFH functions.

7. References

Good, T.P., R.S. Waples, and P. Adams (editors). 2005. Updated status of federally listed ESUs of West Coast Salmon and steelhead. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-66, 598 p.

Lagomarsino I. 2005. National Marine Fisheries Service, Southwest Region Arcata Area Office. Personal Communication with Ms. Loreen McMahon, Western, identifying Federal threatened and endangered species and critical habitat occurring within the project area. Letter dated May 2, 2005.

NMFS. 2007. National Marine Fisheries Service, Southwest Regional Office, Recovery of Salmon & Steelhead in California and southern Oregon, web site. Accessed January 4, 2007.

Sinnen, W. 2002. Annual report: Trinity River Basin Salmon and Steelhead monitoring project, 2001–2002 season. Task 3: Survival and spawner escapements made by Coho Salmon produced at the Trinity River Hatchery. (Available from California Department of Fish and Game, Northern California Coast District, 5341 Ericson Way, Arcata, California 95521.)

TRRP. 2007. Trinity River Restoration Program, web site. www.trrp.net. Accessed May 17, 2007. See also: <http://www.trrp.net/documents/ROD.pdf> for the record of decision on Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement/Environmental Impact Report.

USDA-Forest Service. 2005. Browns Project Biological Assessment. Trinity River Management Unit, Shasta-Trinity National Forest, Trinity County, California.

Western Area Power Administration. 2007. Draft Environmental Impact Statement. Trinity Public Utilities District Direct Interconnection Project. DOE/EIS-0389. (Copies available from Mr. Mark Wieringa, Western Area Power Administration, P.O. Box 281213, Lakewood, Colorado, 80228).

Figure 1. Regional map of the Project showing the three Project segments (see DEIS Figure 2-1).

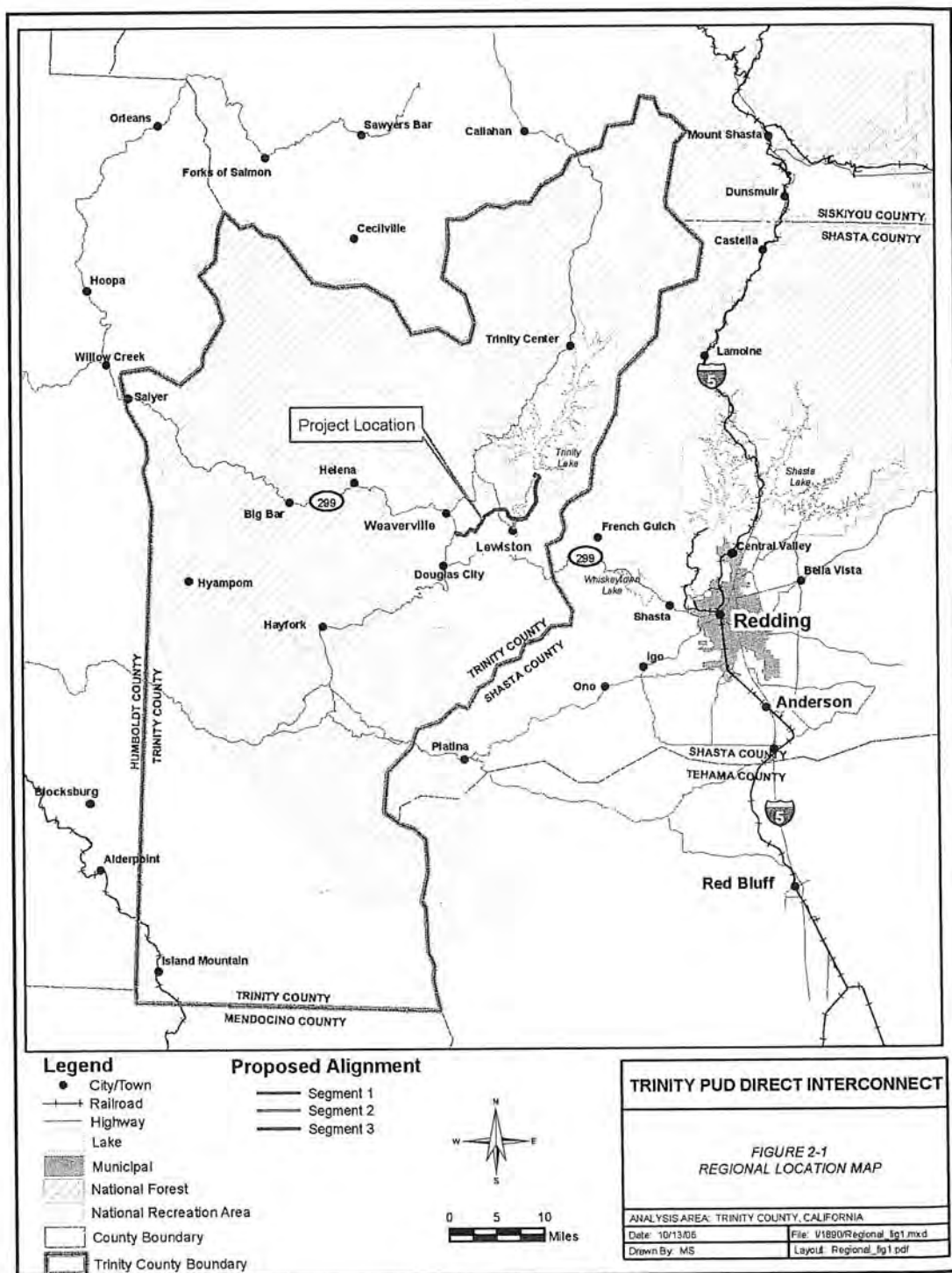


Figure 2. Vicinity map of the Project showing the three Project segments (see DEIS Figure 2-1).

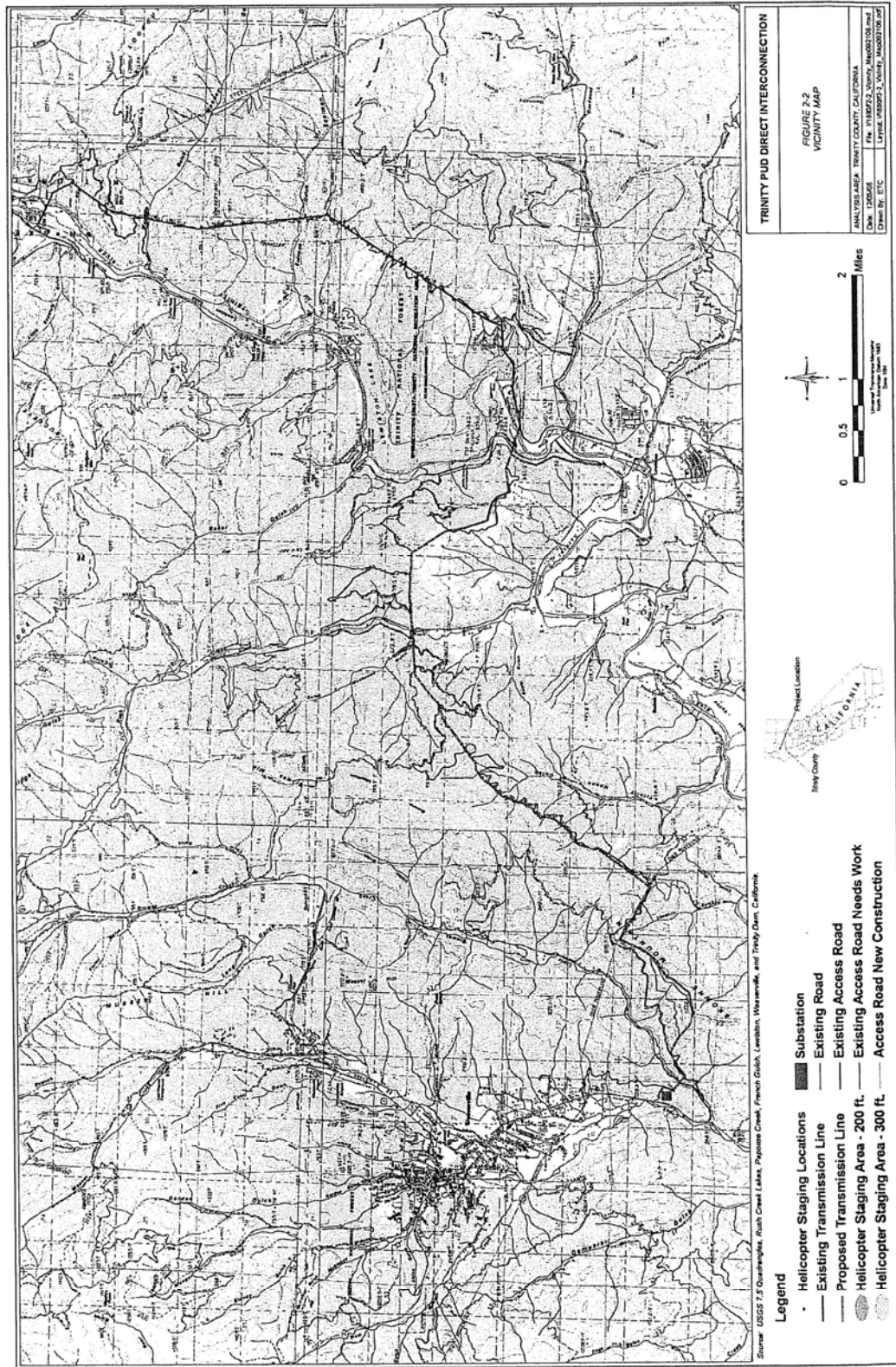


Figure 3. General map of Coho Salmon ESUs including the SONCC Coho Salmon range, and including a finer detailed map (below) indicated the Klamath and Trinity Rivers (from www.nwr.noaa.gov).

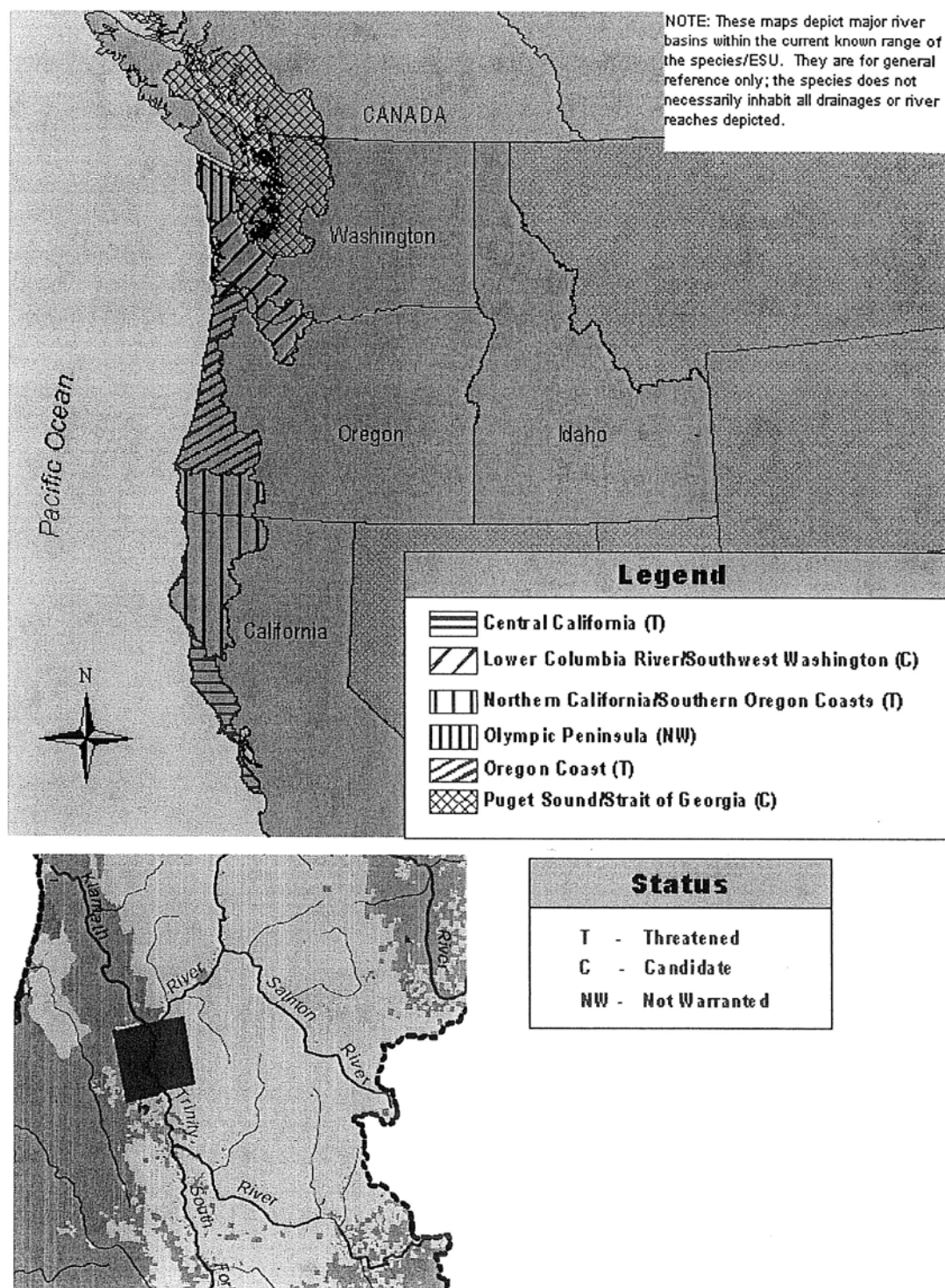


Table 1. Endangered Species Act status of west coast Salmon and steelhead ESUs (from NMFS website at www.nwr.noaa.gov).**Endangered Species Act Status of West Coast Salmon & Steelhead**

(Updated June 8, 2006)

Species ¹			Current Endangered Species Act Listing Status ²	ESA Listing Actions Under Review
Sockeye Salmon (<i>Oncorhynchus nerka</i>)	1	Snake River	Endangered	
	2	Ozette Lake	Threatened	
	3	Baker River	Not Warranted	
	4	Okanogan River	Not Warranted	
	5	Lake Wenatchee	Not Warranted	
	6	Quinalt Lake	Not Warranted	
	7	Lake Pleasant	Not Warranted	
Chinook Salmon (<i>O. tshawytscha</i>)	8	Sacramento River Winter-run	Endangered	
	9	Upper Columbia River Spring-run	Endangered	
	10	Snake River Spring Summer-run	Threatened	
	11	Snake River Fall-run	Threatened	
	12	Puget Sound	Threatened	
	13	Lower Columbia River	Threatened	
	14	Upper Willamette River	Threatened	
	15	Central Valley Spring-run	Threatened	
	16	California Coastal	Threatened	
	17	Central Valley Fall and Late Fall-run	Species of Concern	
	18	Upper Klamath-Trinity Rivers	Not Warranted	
	19	Oregon Coast	Not Warranted	
	20	Washington Coast	Not Warranted	
	21	Middle Columbia River spring-run	Not Warranted	
	22	Upper Columbia River summer/fall-run	Not Warranted	
	23	Southern Oregon and Northern California Coast	Not Warranted	
	24	Deschutes River summer/fall-run	Not Warranted	
Coho Salmon (<i>O. kisutch</i>)	25	Central California Coast	Endangered	• Critical habitat
	26	Southern Oregon/Northern California	Threatened	
	27	Lower Columbia River	Threatened	
	28	Oregon Coast	Not Warranted	
	29	Southwest Washington	Undetermined	
	30	Puget Sound/Strait of Georgia	Species of Concern	
Chum Salmon (<i>O. keta</i>)	31	Olympic Peninsula	Not Warranted	
	32	Hood Canal Summer-run	Threatened	
	33	Columbia River	Threatened	
	34	Puget Sound/Strait of Georgia	Not Warranted	
Steelhead (<i>O. mykiss</i>)	35	Pacific Coast	Not Warranted	
	36	Southern California	Endangered	
	37	Upper Columbia River	Threatened	
	38	Central California Coast	Threatened	
	39	South Central California Coast	Threatened	
	40	Snake River Basin	Threatened	
	41	Lower Columbia River	Threatened	
	42	California Central Valley	Threatened	
	43	Upper Willamette River	Threatened	
	44	Middle Columbia River	Threatened	
	45	Northern California	Threatened	
	46	Oregon Coast	Species of Concern	
	47	Southwest Washington	Not Warranted	
	48	Olympic Peninsula	Not Warranted	
Pink Salmon (<i>O. gorbuscha</i>)	49	Puget Sound ³	Proposed Threatened	• Critical habitat • Protective Regulations
	50	Klamath Mountains Province	Not Warranted	
	51	Even-year	Not Warranted	
	52	Odd-year	Not Warranted	

¹ The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries considers an Evolutionarily Significant Unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries has delineated Distinct Population Segments (DPSs) for consideration as "species" under the ESA.

² Updated final listing determinations for 16 salmon species were issued on June 28, 2005 (70 FR 37160). Updated final listing determinations for 10 West Coast steelhead species were issued on January 5, 2006 (71 FR 834). On September 2, 2005, we issued final critical habitat designations for 19 West Coast salmon and steelhead species (70 FR 52488 and 52630).

³ Puget Sound steelhead was proposed for listing as a threatened species on March 29, 2006 (71 FR 15666).

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

JUL 11 2007

In response refer to:
2007/04404

Mr. Stephen Tuggle
Natural Resources Manager
Department of Energy
Western Area Power Administration
Sierra Nevada Customer Service Region
114 Parkshore Drive
Folsom, California 95630-4710

Dear Mr. Tuggle:

On June 26, 2007, NOAA's National Marine Fisheries Service (NMFS) received your letter initiating consultation pursuant to section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*) and its implementing regulations (50 CFR 402) for implementing the Trinity Public Utility District Direct Interconnection Project (hereafter referred to as Project) in Trinity County, California. Specifically, the Western Area Power Administration (WAPA) is requesting that NMFS concur with its determination that the Project may affect, but is not likely to adversely affect, Federally threatened Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*) or its designated critical habitat. WAPA also requests NMFS' concurrence that the Project is not likely to adversely affect Essential Fish Habitat (EFH) as described under the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996.

Proposed Action

The Project will improve electrical system reliability by providing a shorter, new direct interconnection with WAPA's transmission system at the Trinity Power Plant. WAPA proposes to install a single-circuit, three-phase 60 kilovolt (kV) transmission line on single wood pole structures with aluminum conductor steel reinforced conductors arranged in a horizontal or triangular configuration. A combination fiber optic cable and ground wire would be strung overhead to provide communications capability and lightning protection. Approximately 264 poles would be needed to construct the new 60 kV line that would traverse the right-of-way used by the previous Trinity-Lewiston 12-kV distribution line. To accommodate the higher voltage line, the existing right-of-way must be extended from 20 feet to 80 feet and cleared of tall trees that pose a hazard to the power line. Most of the new poles will be guyed with wire cables to the ground for added stability, with some guy wires anchoring slightly outside of the existing right-of-way. Steel screws or other anchoring devices would be used, and all anchors will be buried approximately 6 feet underground.



Installation of the new line will require construction of new access roads and upgrades to existing access roads. Approximately 3 miles of the 9.5 miles of existing access roads on the Shasta-Trinity National Forest (STNF) will need to be upgraded by blading and/or placing rock/gravel within the confines of the existing road bed. Several stream crossings on the STNF may need upgrading/maintenance work prior to implementing the Project, but the locations of these crossings occur in drainages above Lewiston Dam and, therefore, are inaccessible to anadromous fish. On land not managed by STNF (*i.e.*, watersheds located downstream of Lewiston Dam), approximately 8.7 miles of road are in need of gravel improvement, and approximately 2 miles of new access roads will be required. All new road segments will be short, dead-end spur roads from existing access roads to pole locations. The new road spurs will be left in place and allowed to revegetate over time.

Depending on the technique used to insert the power poles (*i.e.*, ground-based machinery, helicopter, or mixed), six helipad/staging areas totaling approximately 22 acres will need to be constructed outside of the right-of-way. Several log decks will also be cleared adjacent to access roads where logs would be yarded for loading.

Effects of the Action

The Project will require the crossing of several headwater and mainstem creeks by vehicles/equipment and the new 60 kV power line. Segment 3 of the Project (*i.e.*, the portion of the line below Lewiston Dam) will cross lower Rush Creek and Little Browns Creek, which both support populations of SONCC coho salmon. Several spur roads and landing/loading pads will be constructed at higher elevations along the new transmission line and accompanying access road.

Road and stream crossing construction can increase instream sediment concentrations that can harm coho salmon and their habitat. However, the Project will utilize an existing road network for access to the Project area below Lewiston Dam, and no new stream crossings will be necessary. Thus, no new sediment contribution is expected from Project construction with regard to stream crossings and mainline road construction. Furthermore, new landing/loading pads and access spurs will be constructed adjacent to the new power line and right-of-way. Since the new power line traverses along ridge tops for much of its length, the new spur and pad construction will take place in high-elevation, headwater reaches of the affected watersheds away from flowing water and is not expected to contribute appreciable sediment to downstream reaches. WAPA will implement the following sediment minimization measures that will further reduce the likelihood that sediment from the Project will adversely affect SONCC coho salmon or its habitat.

- 1) Upon completion of the work, all work areas except access trails would be scarified or left in a condition that would facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
- 2) Excavated material or other construction materials would not be stockpiled or deposited near or on streambanks, lake shorelines, or other watercourse perimeters where they can be washed away by high water or storm runoff, or can encroach, in any way, upon the watercourse.

- 3) All soil excavated for structure foundations would be backfilled and tamped around the foundations, and used to provide positive drainage around the structure foundations.
- 4) Disturbance and removal of soils and vegetation would be limited to the minimum area necessary for access and construction.
- 5) Grading would be minimized to the extent possible. When required, grading would be conducted away from watercourses/washes to reduce the potential for material to enter the watercourse.

In light of the above analysis, NMFS concurs with WAPA's determination that the Project is not likely to adversely affect SONCC coho salmon or its critical habitat.

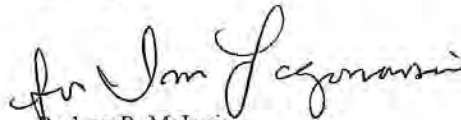
The Pacific Fishery Management Council has delineated EFH for Pacific Coast Salmon [Chinook salmon (*O. tshawytscha*) and coho salmon], which includes the action area of the Project. Because the habitat requirements of Chinook salmon in the Project area are similar to those of SONCC coho salmon, and based on the same effects analyses for SONCC coho salmon and their critical habitat discussed above, NMFS concurs with WAPA's determination that the Project will not adversely affect EFH for Pacific Coast Salmon species. Therefore, EFH Conservation Recommendations are not warranted for this Project.

Conclusion

This concludes ESA consultation in accordance with 50 CFR 402.13 for the proposed Project. However, further consultation may be required if: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered during this consultation, or (3) a new species is listed or critical habitat designated that may be affected by the identified action.

NMFS appreciates the opportunity to assist WAPA in addressing ESA compliance for its projects that may affect listed salmonids. Please contact Mr. Rick Rogers at (707) 825-5167, or via e-mail at rick.rogers@noaa.gov, if you have any questions concerning this consultation or require additional information.

Sincerely,


Rodney R. McInnis
Regional Administrator

cc: Copy to file – ARN #151422SWR2005AR00251

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**ENDANGERED SPECIES ACT
SECTION 7
U.S. FISH AND WILDLIFE SERVICE**

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United States
Department of Agriculture

Forest Service

Shasta-Trinity National Forest
Headquarters

3644 Avtech Parkway
Redding, CA 96002
(530) 226-2500
(530) 226-2490 - TDD
www.fs.fed.us/r5/shastatrinity

File Code: 2670

Date: August 2, 2007

Mr. James G. Smith
U.S. Fish and Wildlife Service
10950 Tyler Road
Red Bluff, CA 96080

Dear Mr. Smith:

The Biological Assessment (BA) for the 2007 Trinity Public Utility District Interconnect Project is attached for your review. The proposed project is located within Trinity County and occurs on the National Recreation Area of the Shasta-Trinity National Forest, the Bureau of Land Management Redding District and on private lands.

The Western Area Power Administration (WAPA) proposes upgrading an existing 12 kilovolt (kV) powerline located on a 20-foot right of way to a 60 kV powerline located on an 80-foot right of way. The existing line and proposed route for the upgrade begins at Trinity Dam and proceeds about 5.3 miles south on the ridges above the eastern side of Lewiston Lake before crossing the Trinity River just below Lewiston Dam. The line crosses a little more than 4 miles of Forest Service land and less than 2/3 of a mile of BLM lands. The remaining portions of the proposed upgrade occur on private lands and are not considered in this analysis. Upgrading the line will require the removal of timber on a portion of the line.

Forest Service lands crossed by the proposed upgrade include Late Successional Reserves and Northern Spotted Owl Critical habitat. Although there are owls in the area, there are none whose territories are impacted by the proposed project. BLM lands crossed by the power line are predominantly chaparral or open grey pine woodland and would not by themselves require a Fish and Wildlife Service consultation for the proposed project.

We have informally consulted with Ron Clementsen, Shelli Wingo and Keith Paul of your staff beginning with a field review on September 15, 2005.



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Page 2
Trinity PUD Interconnect Project

The Forest has determined that the project, as proposed, may affect but is not likely to adversely affect the northern spotted owl. The project will also affect northern spotted owl critical habitat. Consequently, we request a Letter of Concurrence from you pursuant to 50 CFR § 402.13 or, if found necessary in your analysis of the impacts of the project on designated critical habitat, a Biological Opinion pursuant to 50 CFR §402.14.

Please direct any questions to Kelly Wolcott, Forest Wildlife Biologist, at (530) 226-2433 or (530) 604-0031 or John Bridges, Western Area Power Administration Senior Wildlife Biologist at (720) 962-7255.

Sincerely,

/s/ J. Sharon Heywood
J. SHARON HEYWOOD
Forest Supervisor

Enclosure

Biological Assessment

Trinity Public Utility District Interconnection Project

I. INTRODUCTION

The purpose of this Biological Assessment (BA) is to present the likely effects of the proposed alternative presented in the Trinity Public Utility District (Trinity PUD) Direct Interconnection Draft Environmental Impact Statement (Draft EIS) to federally endangered, threatened or proposed species.

The Western Area Power Administration (WAPA) proposes to modify 16 miles of an existing 20-foot power line right of way by upgrading the power line and expanding the right of way from 20 feet to 80 feet. This includes:

- 9.5 miles of Federal lands including both the Shasta-Trinity National Forest and the Redding District of the Bureau of Land Management.
- approximately 265 acres of Federal and non-Federal lands,
- including approximately 31 acres of late-successional and old growth forest (about 11 of which are on Federal lands),
- 35 acres of LSR, and
- about 37 acres of designated Critical Habitat for the northern spotted owl.

This document has been prepared in accordance with current policy and follows the standards established in Forest Service Manual direction (FSM 2670.32). A separate BA addresses listed fish species.

The species considered in the document are:

Endangered

McDonald's rock-cress (*Arabis macdonaldiana*)

Threatened

Bald eagle (*Haliaeetus leucocephalus*)

Northern spotted owl (*Strix occidentalis caurina*)

Marbled murrelet (*Brachyramphus marmoratus*)

California red-legged frog (*Rana aurora draytonii*)

Proposed

None

Candidate

Pacific fisher (*Martes pennanti*)

Species Dropped from Further Analysis

The following species will not be discussed further in this BA except in the determinations section (VII) for the following reasons:

The project area lies outside the known or expected ranges of the McDonald's rock-cress, (CDFG 2000) the marbled murrelet (Ralph et al. 1995) and the California red-legged frog (USDI 2002).

II. CONSULTATION TO DATE

- September 15, 2005: Ron Clementsen, (Forest Program Leader, U.S. Fish and Wildlife Service, Red Bluff, Field Office (Service)), Kelly Wolcott (Forest Wildlife Biologist, Shasta-Trinity National Forest (STNF), Redding, CA), Ami Goerdt and John Bridges (Biologists, Western Area Power Administration (Western), Folsom, CA, and Lakewood, CO, respectively) visited the project area to discuss the project and the needs of the three Federal agencies involved.
- October 6, 2005: the Shasta-Trinity National Forest accessed the most recent list of endangered, threatened, proposed, and candidate species that may occur in the project area (i.e. Trinity County) from the Service's web site (<http://www.fws.gov/cno/arcata/specieslist/speciesreport.asp>). An updated (July 25, 2007) species list is included in Appendix 1 of this document.
- July 11, 2006: another meeting was held to review field conditions, discuss the status of the project, changes in the project description, level of NEPA documentation, and staff assignments. The participants included Ron Clementsen and Sheli Wingo (U.S. Fish and Wildlife Service), Kelly Wolcott, Tom Quinn and Becky Rogers (Shasta-Trinity National Forest), and John Bridges (Western Area Power Administration).
- July 21, 2006: A Draft BA was provided to the FWS for review.
- October 30, 2006: a field review of watershed crossings was held with Keith Paul, U.S. Fish & Wildlife Service, Rick Rogers, National Marine Fisheries Service and Ami Goerdt, John Bridges, Gary Burton and Mark Wieringa, Western Area Power Administration.
- January 7, 2007: The draft BA was sent to the FWS and the STNF for review and comment.

- March 6, 2007: Keith Paul (Service), Kelly Wolcott (STNF), Gary Diridoni (Bureau of Land Management (BLM)), and John Bridges, J. Adam Arellano, and Mark Wieringa (Western) met to discuss comments on the Draft BA and mitigation/compensation.
- April 16, 2007: Keith Paul (Service), Kelly Wolcott and Arlene Kallis (STNF), and John Bridges (Western) met to discuss and refine comment responses and the mitigation compensation for the proposed action.

III. CURRENT MANAGEMENT DIRECTION

The STNF is currently operating in full compliance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD; USDA Forest Service and USDI Bureau of Land Management, 1994). The Regional Forester approved the STNF Land and Resource Management Plan (Forest Plan or LRMP) on April 28, 1995, and it became effective as of June 5, 1995. The Northwest Forest Plan Record of Decision was incorporated into the STNF Forest Plan.

The Forest Plan adopts the recovery plan for the bald eagle (USDI 1986) and the ROD as the Federal contribution to the recovery of the northern spotted owl. The STNF expects the network of areas withdrawn from active timber management (e.g. wilderness, late-successional reserves, riparian reserves, and administratively withdrawn areas) along with standards and guidelines related to snag, log, and hardwood retention to provide habitat adequate to maintain viable, well-distributed populations of federally listed or proposed species.

IV. DESCRIPTION OF PROPOSED ACTION

Location of Proposed Action

The project is located in Trinity County, California, in Sections 22, 27, and 34, T. 34 N., R. 8 W.; Sections 3, 4, 7, 8, 9, 17, T. 33 N., R. 8 W.; and Sections 1, 2, 10, 11, 15, 19, 20, 21, 22, T. 33 N., R. 9 W., Mt. Diablo Principal Meridian (**Figure 1**).

Purpose and Need for Action

The existing electrical transmission facility, owned and operated by PG&E, undergoes frequent outages, particularly during winter. Consumers in this area routinely see nearly 20,000 consumer hours per year in outages according to Trinity PUD. Many of the outages last three to four days in the winter before power is restored. During this time many customers are without heat and power. Trinity PUD and its customers need reliable electric service as provided for in the Trinity Division Act of August 12, 1955. The proposed action would enhance the reliability of electrical service to Trinity PUD customers by establishing a new direct interconnection with the Central Valley Project (CVP) transmission system at the Trinity PUD Substation. The purpose of the proposed

action is to provide a direct interconnection with the transmission system that would enhance the reliability of service to Trinity PUD consumers.

PG&E does not have a maintenance crew in this area, and in the case of a power outage, must mobilize crews from further south, requiring long wait times between the reporting of the outage and initiation of the repair. By installing their own line, Western and Trinity PUD would be able to respond much more quickly to outages and significantly reduce the duration of the outage. In addition, power delivery to Trinity PUD across PG&E's system is a much longer path than the Proposed Project. The longer path, through rugged and remote locations, would be expected to have a higher risk of outages from storms and falling trees than the much shorter proposed route.

Summary of Proposed Actions

The U.S. Department of Energy, Western Area Power Administration's Sierra Nevada Regional Office (Western) is proposing to construct, own, operate and maintain the Trinity PUD Direct Interconnection Project. The proposed action would expand an existing 20 foot right of way to a 80 foot right of way to accommodate a new single-circuit, single-phase, 60-kilovolt (kV) transmission line on wood poles with aluminum conductor steel reinforced conductors arranged in a horizontal or triangular configuration. A combination fiber optic cable and ground wire would be strung overhead to provide communications capability and lightning protection. The new line replaces an existing 12 kV line.

Approximately 264 structures would be needed. About 11 of these would be three-pole turning structures with a few self-supporting steel poles. The turning structures and approximately 95 additional single poles would be guyed with wire cable to anchors in the ground. Some anchors would fall outside of the normal 80-foot ROW; in those locations additional clearing would be required, and additional ROW needs determined and obtained. While clearing could be needed for the anchors, no logging would occur in these guy pockets. The anchors would consist of steel screw anchors in soil, an eight-foot anchor rod with plate in fractured rock, or a grouted rod in solid rock. Anchors would be buried approximately six feet in the ground. Anchor holes would be augured where vehicle access is possible, otherwise they will be drilled with hand power augers, or hand-dug.

Western would remove the existing Trinity-Lewiston 12-kV distribution line (Trinity PUD line) and expand the right-of way (ROW) from 20 feet to 80 feet. This additional 60 feet is necessary to comply with the National Electric Safety Code for 60-kV transmission lines. The entire 80-foot wide ROW would be cleared of all trees to provide a safe work environment for removal of the existing line and construction of the new line. Low-growing trees, shrubs, and ground vegetation would be left in place to the extent possible. Where drainages and ravines would be spanned, the additional conductor clearance would allow Western to leave larger vegetation in place and minimize disturbance in these locations. Additionally, the removal of trees outside the ROW that could fall into the line (danger trees) would be necessary. The new line would utilize the

expanded ROW from Trinity Dam down river approximately 5.3 miles towards Lewiston, CA.

In the southeast corner of Section 7, T. 33 N., R. 8 W., a radial tap line would be built on a new ROW to the existing Trinity PUD Lewiston Substation. This approximately one mile-long line would provide a redundant path for electricity to go into the Lewiston Substation. A steel pole with a three-way switch would be installed near mile 6.

From this point to the proposed new Weaverville Switchyard, Western would acquire a new 80-foot wide ROW to build the remaining portion of the new 60-kV transmission line. This section of the proposed project would be approximately nine miles long. The ROW for the line would be cleared as described above. The Weaverville Switchyard would be a 90x100-foot facility located near Highway 299, and accessed by an abandoned segment of that state highway.

The new 60-kV line would connect to the Lewiston Substation. A fiber optics cable would be added to the proposed transmission line's ground wire to improve the control and protection of the newly installed system.

An existing 12-kV distribution line from the Trinity Dam power station would be rebuilt and approximately ten spans would be added to the line to connect it with the Trinity Substation. A fiber optical bundle would be underbuilt on the line from the power station to the substation, for communication between the two. The line would be built on single poles using designs that would meet or exceed the criteria in The Suggested Practices for Raptor Protection on Power Lines (APLIC 2006).

Western will use Forest Service and Bureau of Land Management approved herbicides to maintain the ROWs for its lines. The maintenance of these ROWs will follow Western's Transmission Vegetation Management Program that includes Western's objectives, practices, approved procedures, and work specifications. This document is available upon request.

Access Road Construction/Improvement

Interdependent actions would include new or upgraded access roads. Upgrading existing access roads involves blading and/or placing rock and/or gravel within the confines of the disturbed roadbed. There are approximately 9.5 miles of existing access roads on the STNF. Of these, about 3.0 miles of access road would need improvement, although work may be confined to segments of these roads. Drainage crossings would be accomplished by hand-placing local rock in the roadbed. No culverts would be emplaced due to risk of plugging and blow-out, and no soil fill is anticipated. Approximately 1.0 miles of new access roads on the STNF would be constructed. Off the STNF approximately 2.4 miles of the existing 8.7 miles of roads would need to be improved. The entire proposed action would require about 2.0 miles of new access road to be constructed, all short dead-end spurs from existing access roads to pole locations. These new spur roads would be left in place, but not permanently maintained. In other words, the grading would remain, but

they would be allowed to revegetate, and may be blocked at the request of the land manager/owner.

Staging, Laydown, Tensioning and Guy-wire Areas

Depending on the type of construction (i.e. helicopter, ground, or mixed) another interdependent action would include clearing construction platforms needed for assembly and/or erection of the new structures. Six helipad/staging areas, totaling nearly 22 acres, would be set up outside of the ROW.

In addition to the 80-foot wide ROW, pull sites, to tension the conductors and the overhead ground wire, would call for use of about six acres outside of the ROW. On the STNF, these locations would be the same as used for the construction of the existing 12-kV Trinity line. Also, due to the steepness of the terrain in the project area, many structures would require two to eight guys/anchors to keep the poles stable. These sites would require an additional 16 acres of some clearing, but no logging.

METHODS

Biological field surveys consisted of a 200-foot wide survey of the existing and proposed transmission line routes. This survey area included 48.3 acres of Bureau of Land Management (BLM) lands, 141.9 acres of STNF lands, and 201.5 acres of private ownership, including Sierra Pacific Industries (SPI).

Western hired contractor biologists to identify and locate wildlife and plant species of concern in the project area. The purpose of the biological field survey was to: 1) identify and record sensitive biological resources and habitat types within the project area; 2) assess the impacts to sensitive biological resources; and 3) identify measures to avoid or minimize impacts to sensitive biological resources. Information from this Biological Report has been used to prepare the BA for federally endangered, threatened, proposed and candidate species and designated Critical Habitat.

The U.S. Forest Service conducted protocol surveys for the northern spotted owl in the vicinity of the existing and proposed transmission line in June, July, August 2006 and May, 2007. Additional information on spotted owl occurrences within the project area was received from the BLM, California Department of Fish and Game and from SPI. Approximately 16 miles of rebuilt and new line cross within the 1.3-mile buffer of three current and eight historic northern spotted owl activity centers. None of the Lewiston Tap line crosses a buffer zone.

Additional Design Criteria (Mitigation Measures)

The following interdependent actions would reduce or avoid impacts to forest resources, particularly wildlife resources:

- Limited Operating Periods (LOPs), also called construction windows, would be implemented to minimize effects to the northern spotted owl. From February 1 through July 10, all noise and smoke generating activities would be prohibited within ¼ mile of a spotted owl home range. In addition, all vegetation removal/cutting/burning would be prohibited from February 1, through September 15, within suitable nesting/roosting habitat. These LOPs may be lifted if surveys, using currently accepted protocols indicate specific areas are not occupied by breeding owls or with the mutual consent of the U.S. Fish & Wildlife Service and the U.S. Forest Service.
- Leave snags that would not create a safety hazard or hinder reliable operation of the line.
- Retain all hardwoods that would not become a safety hazard or hinder reliable operation of the line.
- Intermittent and ephemeral streams that display annual scour would have a minimum 150-foot Riparian Reserve based on the average maximum height of 200-year-old trees for the site, providing it does not interfere with human safety or line reliability.
- Fish bearing streams that display annual scour would have a 300-foot Riparian Reserve on both sides, based on twice the average maximum height of 200-year old trees for the site, providing it does not interfere with human safety or line reliability.
- Selective thinning would occur in the Riparian Reserves to enhance worker safety and line reliability.
- During construction and maintenance activities, speed limits on non-public access roads would not exceed 15 miles per hour.
- Prior to entering the project area, all personnel would be required to go through safety and environmental training. This training would deal with environmental laws, the species of concern, the reasons they are protected, and measures to ensure the safety of workers and protected biological resources.
- The proposed project would fund habitat improvements by the Forest Service at a ratio of five acres improved for every acre disturbed in Critical Habitat, seven acres improved for each acre disturbed in nesting and roosting habitat and three acres improved for each acre disturbed in areas capable of becoming spotted owl habitat. The costs of these improvements would average \$2,744 per acre.

V. EXISTING ENVIRONMENT

Spatial Scales

- The 54,000 acre Weaverville 5th Field Watershed encompasses the project area. The *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (Northwest Forest Plan ROD) establishes the 5th field watershed as an appropriate context for landscape-level analyses. The watershed is used to analyze the Standard & Guideline (S&G): “Provide for Retention of Old-Growth Fragments Where Little Remains”

- The **Action area** consists of a right-of-way 80 feet wide by 16 miles long with up to 25 miles of access road rehabilitation and construction. On the STNF, approximately 9.5 miles of access roads are present with 3.0 miles of those needing improvement and an additional one mile needs to be constructed. Off the STNF, there are 8.7 miles of access roads with approximately 2.4 miles that would need varying levels of improvement in places and another 0.5 miles that would need to be constructed.] Six helipad staging areas, 37 pulling locations outside the ROW, and 98 structures would require guy wires for stability. The total acreage that would be disturbed is approximately 265 acres.
- The spotted owl **home range** consists of a 1.3-mile buffer around the three current and eight historic activity centers crossed by the proposed action where existing habitat may be affected (see Figure 1).
- The spotted owl **territory** consists of a 0.7-mile buffer around the two historic and one recent (2006) activity centers crossed by the proposed action where existing habitat may be affected (see Figure 1).
- The **project area** would be those areas that would be directly impacted by the proposed action (e.g. access roads, the ROW, danger trees (trees that are outside the ROW that could fall into the line and start a fire and/or create safety issues) and staging areas. The project area overlays the other four areas and is used in the context of analyzing effects to those areas.

LAND ALLOCATIONS AND CRITICAL HABITAT

All actions proposed in the project area lie within the 54,000-acre Weaverville 5th Field Watershed. The area's main assigned biological role is maintaining viable populations of species associated with late-successional and old growth (LSOG) forest ecosystems. The overall strategy of the area is to provide connectivity between large areas set aside for these species, such as late successional reserves (LSRs), while maintaining at least 15 percent of federal forest land in LSOG conditions.

The proposed action would affect 11.3 acres of Federal late-successional and old growth (LSOG) forest on Federal lands and approximately 20 acres on private lands. Thirty five acres lies in Late-successional reserves and the proposed action crosses current or historic owl territories on approximately 2.8 miles. The proposed action may affect approximately 27 acres in the three territories involved. The proposed action would cross approximately 3.5 miles of designated Critical Habitat affecting approximately 37 acres.

The 18 guyed structures and four pulling/tensioning sites would also be set up outside the ROW.

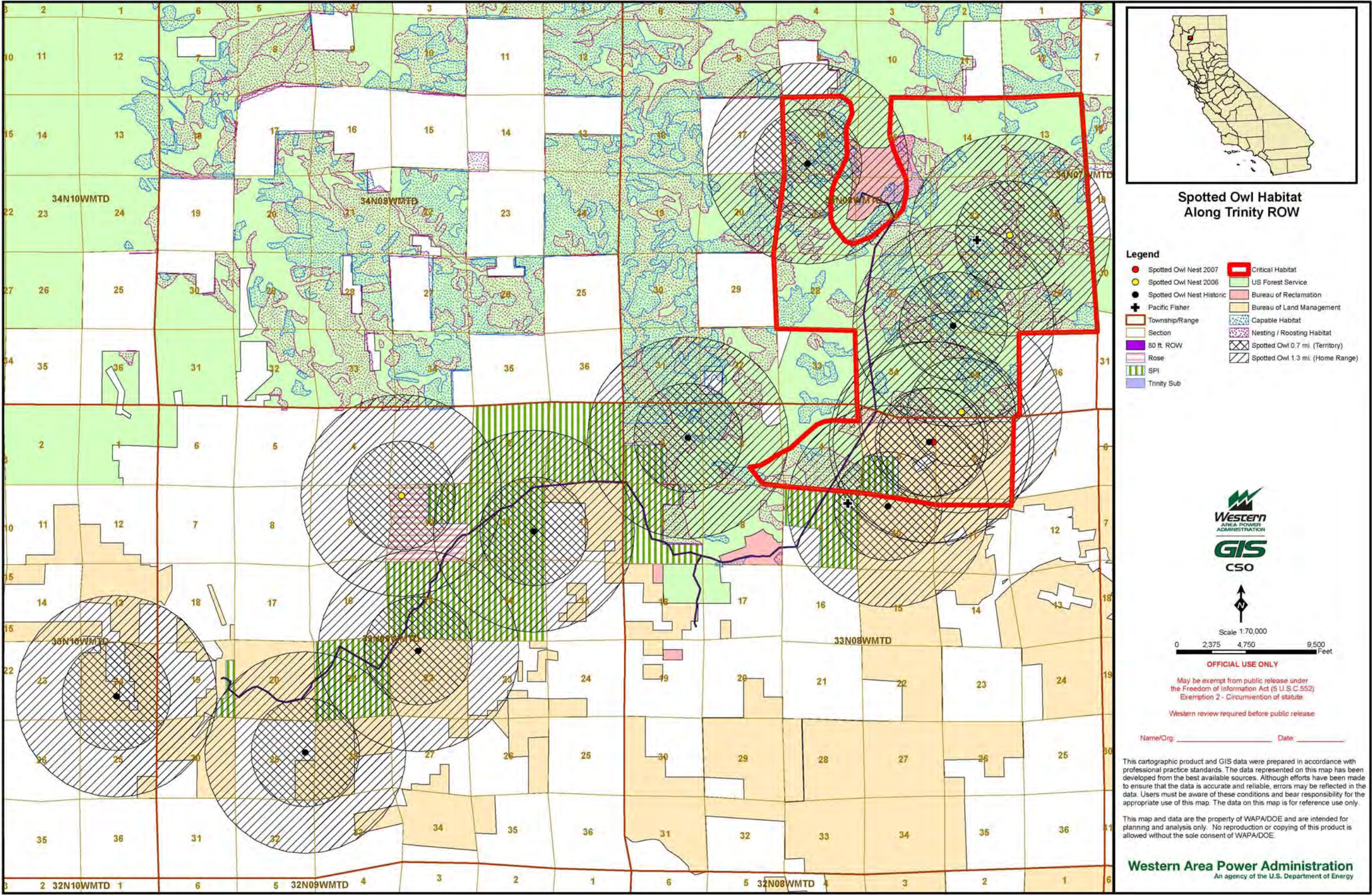


Table 1 lists the landownership and amount of acreage of Critical Habitat crossed. Not all of this would be a long-term modification because ground cover at the pulling sites and around the guys would be allowed to return.

Table 1. Spotted owl habitat types crossed by land owner/manager.

Habitat Type Ownership	Critical Habitat (acres)	Nesting/Roosting Habitat ⁽¹⁾ (acres)	Capable of Becoming NSO Habitat ⁽¹⁾ (acres) (includes foraging habitat)	Total (acres)
Forest Service & BLM	37	11.3	2.5	13.8
Private	None	20.2	40.0	60.2
Total (acres)	37	31.5	42.5	74.0

¹ Included in Critical Habitat Crossed

The ROW would be 80 feet wide, the clearing of which would allow increased light to the forest floor that may increase the brushy habitat preferred by the woodrat (*Neotoma* sp.). The woodrat is an important prey species of the spotted owl and fisher (Gutierrez 1992; Franklin and Gutierrez 2002, and Zielinski et al. 1999).

SPECIES ACCOUNTS:

Northern spotted owl

The northern spotted owl was listed as a threatened species in 1990 (USFWS 1992) and Critical Habitat was designated for the northern spotted owl in a Final Rule.

Critical Habitat Units (CHU) for the owl include a number of forest stands in northern California, one of which is crossed by the proposed action using the existing ROW and access road system. Spotted owl critical habitat was designated based on the identification of large blocks of suitable habitat that are well distributed across the range of the spotted owl. These habitat units were intended to identify networks of habitat to maintain stable, interconnected populations over the range of the spotted owl. Each CHU is expected to have a local, provincial, and arrange-wide role in conservation of the species. The CHU affected by the proposed action would be CHU CA-33. This unit is

composed of 2,249 acres. The proposed action would affect 37 acres or 0.016 percent of the total acres of the CHU

Primary Constituent Elements

The northern spotted owl typically nests and roosts in habitat that includes old growth forest with a canopy cover of 60 to 80 percent closure, with multiple layers and multiple species. Overstory trees tend to be greater than 30 inches diameter at breast height. Other attributes include a high incidence of tree deformities, snags, fallen trees and debris on the forest floor. The sub-canopy must be open enough for hunting. Although the owls are found in younger forests (< 100-years), population densities are higher in old growth (> 200-years) and use the younger forests for foraging, based on its availability in their home range (USFWS 1992). Owl populations in northern California appear to be stable, more or less (Courtney et al. 2004). The reasons for listing the northern spotted owl include habitat alteration and fragmentation (USFWS 1992).

Northern spotted owl surveys were conducted by the STNF for the project area. Six protocol surveys were completed in 2006 and three more were completed in 2007. Two spotted owl activity centers were found. One pair had young in the nest and the other pair was roosting. Both pairs were nearly 1.3 miles from the existing line. SPI reports that five spotted owl activity centers, one of which was active in 2006, are located within 1.3 miles of the project area on their land (Steve Self, personal communication with John Bridges, Western Area Power Administration, October 2006).

During the spotted owl surveys, a barred owl (*Strix varia*) was detected outside the survey area in Section 32, T.34 N., R.8W. Barred owls may prey on spotted owls, compete with the spotted owl for prey and/or interbreed with them (Dark et al 1998.)

In order to minimize adverse effects on the spotted owl, no construction activity would occur during the nesting season within the 1.3 mile buffer zone of an active activity center.

Bald eagle

The bald eagle was listed as an endangered species in March 1967 (USFWS 1995). The bald eagle ranges across North America (Finch 1992) and feeds on fish, waterfowl, small mammals and carrion. The nationwide decline in bald eagles can be attributed to direct mortality, such as shootings and poisonings, electrocutions and toxin accumulation. Through conservation efforts, eagle populations recovered sufficiently to down-list the species to Threatened in 1995 (USFWS 1995). The bald eagle has been proposed to be removed from the endangered and threatened species list (USFWS 1999). However, protection would still be afforded by the Bald and Golden Eagle Protection Act.

Bald eagles have been observed along the Trinity River. Bald eagles may also be found during migration and winter periods in areas away from major rivers if sufficient forage (e.g., carrion) is available and can be found in the proposed project area during migration. Bald eagles typically nest in areas with mature forest, along major waterways, lakes, and reservoirs; however, with increasing bald eagle populations, nesting eagles are also being found in areas away from “major” water bodies

Electrocutions may occur on power lines at voltages of 60 kV. However, the transmission line is designed to minimize of electrocutions of large birds, including the eagle, following the suggested practices recommended by the Avian Power Line Interaction Committee (APLIC 2006). There is a possibility that bald eagles could collide with the line, however, at the two Trinity River crossings the line would be marked with the best technology currently available to alert birds to the presence of an obstruction.

The proposed action would avoid disturbance to known active nests during the courtship, breeding, and nesting period from January 1 through July 15, and any construction activity would be restricted within one-quarter mile of an active home range.

Based on compliance with the avoidance and mitigation techniques outlined above and the visual acuity of the eagle, Western has determined that the proposed action may affect but is not likely to adversely affect the bald eagle.

Pacific Fisher

The U.S. Fish and Wildlife Service (FWS 2004) found that the West Coast population of the Pacific fisher was a valid Distinct Population Segment (DPS), which is both discrete and significant under FWS policy, and that listing the fisher in its west coast range is warranted but precluded from listing by pending proposals for other species with higher listing priorities. It is considered a candidate for listing. Historically, the fisher was found across much of northern North America south into the Appalachian Mountains in the east, into the Upper Peninsula of Michigan, northern Wisconsin and Minnesota in the central states, and south into the Pacific Coast range in the west (Powell 1981). According to Powell, populations declined during the period from 1800 until 1940 due to trapping and habitat destruction. In California, the fisher can be found in the Sierra Nevada Mountains in eastern California and from near the Oregon border southward to Lake and Marin Counties in western California. Zielinski et al. (2004a) indicate that fishers appear to occupy less than half of the range they did in the early 1900s in California. They also point out that the population is represented by two remnant populations that are separated by approximately 250 miles. Zielinski et al. (2004a) studied fisher home ranges in two populations (northern Coast Range in Humboldt and Trinity counties and southern Sierra Nevada Mountains in Tulare county) and found that females had home ranges in their Coastal study area were almost three times larger than those in their southern Sierra Nevada study area. They speculate this is probably a result of better quality habitats in the southern Sierra Nevada Mountain study area.

Fishers prefer habitat with an extensive continuous canopy (e.g. lowland forests and spruce-fir forests with high canopy closure) (Powell 1981). Powell also reports that forest type is probably not as important to fishers as the vegetative and structural aspects that lead to abundant prey populations and reduced fisher vulnerability to predation. Fishers avoid forests with little overhead cover and open areas. Good quality fisher habitat should provide high diversity of dense prey populations, high vulnerability of prey to fishers, and natal and maternal dens and resting sites (Powell and Zielinski 1994). Grazing, wildfire suppression, and timber harvest have resulted in dramatic changes in forest ecosystems, including the reduction of large tree component, increased dominance of shade-tolerant conifer species, increased stand density, and reduced structural diversity (FWS 2004). These effects vary among forest ecosystems, but generally are more pronounced in drier interior forests of the eastern Cascades, Sierra Nevada, and eastern Klamath Mountain ranges. Also in the southern Sierra Nevada, Zielinski et al. (2004a) found that home ranges of 12 fishers consisted of large trees (greater than 24 inch diameter at breast height)(dbh), intermediate sized trees (12-24 inch dbh), and dense (greater than 60 percent) canopy closure. Fishers in the western United States utilize stands with certain forest characteristics such as large trees and snags, coarse woody-debris, dense canopy closure and multiple-canopy layers, large diameter hardwoods, and steep slopes near water for resting and denning (Powell and Zielinski 1994). Two very important cover types for the fisher are resting and denning habitat. Powell and Zielinski (1994) suggest that habitat suitable for resting and denning sites may be more limiting for fishers than foraging habitat. Most dens are found in live trees, and there is little evidence that den sites are reused over time (FWS 2004). The trees must be large enough for cavities that can be used for natal and maternal dens. Younger forests in which complex forest structural components such as large logs, snags, and tree cavities are maintained in significant numbers, and which provide a diverse prey base, may be suitable for fisher (FWS 2004).

Fishers also use rest sites as protected locations to consume prey (Powell and Zielinski 1994). Rest site structures used by fishers include: cavities in live trees, snags, hollow logs, fallen trees, canopies of live trees, platforms formed by mistletoe (witches brooms) or large or deformed branches, and to a lesser extent stick nests, rocks, ground cavities, and slash and brush piles (Zielinski et al. 2004b). Tree size, age, and structural features are important characteristics of a rest site. Rest sites must have structures that provide protection from unfavorable weather and predators. The most influential variables affecting rest site selection in California fisher populations include maximum tree sizes and dense canopy closure. Other features are important to rest site choice as well, such as large diameter hardwoods, large conifer snags, and steep slopes near water (Zielinski et al. 2004b).

Habitat alteration seems to be the primary cause of population decline of the fisher. Vegetation management activities such as timber harvest and fuels reduction treatments, stand-replacing fire, large-scale forest disease outbreaks or insect infestations (e.g., pine beetle), and development can destroy, alter, or fragment forest habitat suitable for fishers. The extent of past timber harvest and trapping are the primary causes of fisher decline across the United States (Powell 1981) and timber harvest may be one of the main

reasons fishers have not recovered in Washington, Oregon, and portions of California as compared to the northeastern United States (Powell and Zielinski 1994). Timber harvest can fragment fisher habitat, reduce it in size, or change the forest structure to be unsuitable for fishers. Other factors that can adversely affect the fisher include trapping, commercial and residential development, recreation, and roads. This is particularly true in the southern Sierra because of small population size and factors that might further reduce the small population size such as low reproductive capacity, or other random environmental events.

The fisher is an opportunistic predator with a diverse diet that includes birds, squirrels, porcupines, mice, shrews, voles, reptiles, insects, carrion, vegetation, and fruit (Powell 1981, Zielinski et al. 1999). In the project area, the fisher has historically used the area covered by the proposed project (Zielinski et al. 1995) and is currently using much of it according to Becky Rogers, USFS and Steve Self, Sierra Pacific Industries (personal communications with John Bridges, October, 2006). The proposed action may alter some of the habitat used by the fisher. Western has agreed to provide funds to enhance fisher habitat to the degree that the proposed action would alter it. Western has determined the proposed action may affect but is not likely to adversely affect the fisher due to the discountable effects including the mitigation and compensation measures discussed above.

The Fish and Wildlife Service authors of the twelve month status review for the Pacific fisher noted that “the NWFP embodies ecosystem objectives which are expected to contribute substantially to the restoration and protection of suitable habitat for fishers on Federal lands in the plan area” (FWS, 2004). The system of existing late-successional reserves, riparian reserves and other guidelines such as the preservation of 15% late-successional forests in the watershed as specified under the Northwest Forest Plan, in combination with site and project specific mitigation as specified earlier in this document significantly reduce the probability that any given action would so significantly affect the fisher population in the area that it would require the FWS to alter the current priority for the listing of the Fisher.

VI. EFFECTS OF THE PROPOSED ACTION

Direct effects (Mortality, Harm, Harass, Failed Breeding Attempts, Displacement)

The limit operating periods described above would minimize direct effects to the spotted owl by avoiding disturbances during critical periods of the breeding and chick rearing season. Existing access roads would be used to minimize adverse modification of Critical Habitat.

The response of the individual wildlife species involved to the construction of a new line without intensive studies is speculative at best. They may abandon the habitat temporarily during construction or they may relocate outside the project area

permanently. However, avoidance measures and habitat restoration and/or improvements near the project area should help in recovery of the species over time.

Indirect effects (Habitat)

The narrow (80-foot wide) right-of-way and access roads (20-foot wide) are not likely to reduce movements of the spotted owl (Gutierrez 1992) or the fisher (Zielinski et al 2004a) throughout the project area. The proposed action is replacing an existing distribution line. Therefore it is not likely to induce residential development outside the public lands in the area.

Effects to Spotted Owl Nesting/Roosting and Foraging Habitat

There would be some reduction to canopy cover as a result of widening the ROW, however, this may increase the brushy habitat preferred by the woodrat, and other important prey species of the spotted owl (Ward et al. 1998). The reduction of canopy cover would be limited due to the linear nature of the proposed action.

Canopy layers would not be changed outside the project area.

Effects to Pacific Fisher Breeding and Foraging Habitat

The replacement of the existing line would not affect fisher breeding habitat but may increase habitat for an important prey species

VII. DETERMINATIONS

The proposed action **would not affect McDonald's rock-cress, the California red-legged frog, or the marbled murrelet.**

- **Bald eagle, Pacific fisher**

The proposed action may affect but is **not likely to adversely affect** the bald eagle and the Pacific fisher due to discountable effects of avoidance, the limited nature of the action, mitigation, and habitat restoration.

- **Northern spotted owl**

The proposed action may affect the northern spotted owl, but is **not likely to adversely affect** the northern spotted owl.

- **Designated northern spotted owl Critical Habitat**

The proposed action would affect 36.7 acres of designated Critical Habitat.

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Appendix 1: Endangered Species List**Listed/Proposed Threatened and Endangered Species for
Trinity County (Candidates Included)**

July 25, 2007

Document number: 1045486632-165430

KEY:

(PE) Proposed Endangered Proposed in the Federal Register as being in danger of extinction

(PT) Proposed Threatened Proposed as likely to become endangered within the foreseeable future

(E) Endangered Listed in the Federal Register as being in danger of extinction

(T) Threatened Listed as likely to become endangered within the foreseeable future

(C) Candidate Candidate which may become a proposed species Habitat Y = Designated, P = Proposed, N = None Designated

* Denotes a species Listed by the National Marine Fisheries Service

Type	Scientific Name	Common Name	Category	Critical Habitat
Plants	<i>Arabis macdonaldiana</i>	McDonald's rock-cress	E	N
Fish	<i>Hypomesus transpacificus</i>	delta smelt	T	Y
*	<i>Oncorhynchus kisutch</i>	S. OR/N. CA coho salmon	T	Y
*	<i>Oncorhynchus mykiss</i>	Central Valley steelhead	T	Y
*	<i>Oncorhynchus mykiss</i>	Northern California steelhead	T	Y
*	<i>Oncorhynchus tshawytscha</i>	CA coastal chinook salmon	T	Y
*	<i>Oncorhynchus tshawytscha</i>	Central Valley fall/late-fall chinook salmon	C	N
*	<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run chinook salmon	T	Y
*	<i>Oncorhynchus tshawytscha</i>	winter-run chinook salmon	E	Y
Amphibians	<i>Rana aurora draytonii</i>	California red-legged frog	T	Y
Birds	<i>Brachyramphus marmoratus</i>	marbled murrelet	T	P
	<i>Coccyzus americanus</i>	Western yellow-billed cuckoo	C	N
	<i>Haliaeetus leucocephalus</i>	bald eagle	T	N
	<i>Strix occidentalis caurina</i>	northern spotted owl	T	Y
Mammals	<i>Martes pennanti pacifica</i>	Pacific fisher	C	N

Amendment to the Biological Assessment Trinity Public Utility District Interconnection Project

1. Helicopter Logging:

Due to steep slopes and inaccessible terrain, and in order to avoid a greater impact from road construction, helicopters will be used to yard logs away from the right of way in a portion of the project (between markers 1/1 and 5/4). A flight plan will be generated for the Forest Service that will specify the following:

- Helicopters will not fly over the currently identified owl nesting sites.
- Helicopters will yard material away from the line to the west and to the south, again avoiding the three known northern spotted owl nesting sites.

The need for helicopter logging in these areas significantly constrains implementation. Contracting helicopters is only possible outside of the fire season and can only be counted on from October through early July. In late July, August and much of September, fire suppression utilizes all available commercial heavy lift helicopters capable of aerial yarding.

2. Justification for allowing implementation without Limited Operating Periods (LOPs)

Surveys indicate that in 2006 and 2007 there are three northern spotted owl pairs nesting within several miles of the project. We will refer to these owls as the following:

- Little Papoose Creek Pair: This is the pair that were found nesting in 2006 in the Little Papoose Creek area in section 23, west of the 0/8 line marker.
 - The 1.3 mile territory is completely outside of the construction and project implementation zone.
 - The heavily dissected nature of the terrain around this owl and the dense forest canopy allows us to reduce the usual ¼ mile buffer and exempt this area from a need for an LOP.
- The Eastman Gulch pair: Located and determined to be nesting within section 35 in 2006 and section 3 in 2007.
 - The 1.3 mile territory will be impacted by the project.
 - The .7 mile territory is outside of the project zone.
 - The heavily dissected nature of the terrain significantly buffers the pair from operational disturbance.
 - The pair nested in 2006 and 2007 and is less likely to nest in 2008.
 - An early season survey will confirm the nesting status of this owl (see section 3 of this addendum).
 - If necessary, the FWS will issue an incidental take statement and a modification of the BO if this pair nests in 2008 and is in a position to be significantly disturbed by project implementation.
 - Currently, there is no LOP in place for this owl pair.

- Operational constraints prohibit the use of a full LOP in this area.
 - However, Western will not allow clearing between towers 3/1 and 4/4 until the results of the early Spring survey are complete.
 - Once the survey results are reviewed, implementation can proceed according to the rules in section 3 of this addendum (Requirements for an Early Spring Survey).
- Browns Mountain Pair: Located in private (Rose Lumber) lands in section 10 at the eastern end of the project.
 - A small portion of the 1.3 mile territory of this owl pair intersects with the transmission line.
 - The private lands between the Browns Mountain pair nesting area and the transmission line path are in young plantations and are unsuitable for foraging, resting or nesting. These comprise a significant disturbance buffer between the line and the owl territory.
 - It is most likely that this owl pair is utilizing the drainage in Union Gulch.
 - Union Gulch is buffered by Browns Mountain and unlikely to have significant disturbance from project implementation.
 - For these reasons, this pair are believed to not require an LOP.

3. Requirement for early spring survey of the Eastman Gulch Owl

Due to the proximity of the Eastman Gulch Owl (located and determined to be nesting within section 35 in 2006 and section 3 in 2007) Western will provide the Forest Service and USFWS the results of an early Spring survey that will determine whether or not this owl is nesting in 2008 (implementation year) and where it is nesting. Given the usual pattern of year to year owl nesting in the area, and the confirmed nesting of this pair in 2006 and 2007, it is less likely that this pair will also nest in 2008.

If the owl is not nesting, then:

- A record of the survey would be added to Western, FS, BLM and USFWS records on the project;
- all previous documentation would remain as it is and
- Implementation will proceed without additional documentation.

If the owl is determined to be nesting, and the Forest Service, in consultation and agreement with the USFWS, determines that this owl is **not** likely to be adversely affected, then:

- A record of the survey would be added to Western, FS, BLM and USFWS records on the project;
- all previous documentation would remain as it is and
- Implementation will proceed without additional documentation.

If the owl is determined to be nesting, and the Forest Service, in consultation with the USFWS, determines that this owl is likely to be adversely affected, then:

- An addendum to the BA would be prepared, in consultation with the USFWS, analyzing the likely affect of the disturbance to the owl pair;
- A request would be submitted to the USFWS for incidental take of the affected owl pair;
- The USFWS, if concurring with the determinations and agreeing with the need for an incidental take, would issue an addendum to the BO analyzing the effect of the disturbance on the owl pair and if necessary, issuing an incidental take statement to Western for the disturbance on that pair.

4. Mitigation Measures:

The greatest and most significant effect of this project on the Northern Spotted Owl would be the impact to suitable and capable habitat. In order to mitigate and partially compensate for impacts to this habitat, Western has committed to funding habitat improvement inside LSR or critical habitat on Forest Service lands at a ratio of

- five acres improved for every acre disturbed in Critical Habitat,
- seven acres improved for each acre disturbed in nesting and roosting habitat and
- Three acres improved for each acre disturbed in areas capable of becoming spotted owl habitat.

Effects:

The above additions to the original Biological Assessment do not alter or change the determinations or effects statements of the original BA.

Should surveys determine that the Eastman Gulch owl pair is likely to be significantly disturbed by the project, then Western will request through the FS an addendum to the BO providing an incidental take statement for this owl pair.

//S. Kelly Wolcott

S. Kelly Wolcott

Forest Wildlife Biologist

Shasta-Trinity National Forest



8/14/07
Date



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Red Bluff Fish & Wildlife Office
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In Reply Refer To: 81330-2008-F-0001 **NOV - 5 2007**

Ms. J. Sharon Heywood
Forest Supervisor
Shasta-Trinity National Forest Headquarters
3644 Avtech Parkway
Redding, CA 96002

Subject: Formal Endangered Species Consultation on the Trinity Public Utility District Direct Interconnect Project, Shasta-Trinity National Forest, National Recreation Area, Bureau of Land Management, Redding District and private lands.

Dear Ms. Heywood:

This correspondence is in reply to your letter, dated August 2, 2007, and received by this office on August 17, 2007, requesting formal consultation on the Trinity Public Utility District Direct Interconnect Project (proposed action), occurring on National Recreation Area lands, Shasta-Trinity National Forest (Forest), Redding District Bureau of Land Management (BLM) lands and private lands. The Western Area Power Administration's Sierra Nevada Regional Office (Western) prepared the Biological Assessment (BA) for the Forest, who is the lead Federal agency for consultation with the U.S Fish and Wildlife Service (Service). After examination of the BA, it was determined by the Service that information regarding the removal of northern spotted owl (*Strix occidentalis caurina*) critical habitat, late-successional reserve and matrix lands across the two Federal land management agencies was not clearly delineated. The Service requested that the information in the BA be clarified and resubmitted. A new BA was submitted on October 2, 2007, at which point formal consultation was initiated. The attached document transmits the Service's Biological Opinion based on our review of the proposed action and its effects on designated critical habitat for the federally threatened northern spotted owl in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.). The biological opinion outlines effects of the proposed action, including our determination that the *proposed action is not likely to destroy or adversely modify* designated critical habitat for the northern spotted owl. Additionally, we concur with your determination that the proposed action *may affect but is not likely to adversely affect* the northern spotted owl or bald eagle (*Haliaeetus leucocephalus*).

Ms. J. Sharon Heywood 81330-2008-F-0001

2

On August 14, 2007, the Service, Forest, BLM and Western held a conference call to discuss Limited Operating Periods for the northern spotted owl and based on the outcome of that conversation the Forest drafted an addendum to the BA that provides rationale to support the determination that implementation of the proposed action can proceed without a Limited Operating Period. We have based these rationales and determinations on the following:

Northern Spotted Owl

1. Helicopters used for logging will not fly over the three currently identified owl nesting sites (TR0151 - Papoose Creek Pair, TR0153 - Eastman Gulch Pair and TR0395 - Brown's Mountain Pair) and material will be yarded away from the transmission line right-of-way (ROW) to the west and south, again avoiding the three known northern spotted owl nesting sites.
2. The Little Papoose Creek Pair's (last nesting in 2006) 1.3 mile home range and 0.7 mile territory is completely outside of the construction and project implementation zone (i.e., any area that may be physically disturbed for ROW construction, access road construction/improvement, and construction of staging, laydown, tensioning and guy-wire areas or impacted by helicopter, heavy machinery, or truck noise).
3. The Eastman Gulch Pair's 1.3 mile home range will be impacted by implementation of the proposed project; however, the pair's 0.7 mile territory will not. Additionally, the heavily dissected nature of the terrain (ridgelines and sparsely forested areas around the transmission ROW) significantly buffers the pair from operational disturbance.
4. The Eastman Gulch Pair nested in 2006 and 2007 and is less likely to nest in 2008. However, surveys will be conducted in early 2008 to determine the nesting status of this pair prior to any work being completed within the 1.3 mile home range. If the pair is nesting, then the location of the nest will be determined. If the location of the nest has moved from the location of the nest in 2006 or 2007 and is in a position to be significantly disturbed by project implementation, the Forest will reinitiate consultation with the Service to address impacts to that pair of owls.
5. A small portion of the Browns Mountain Pair's (last nesting in 2006) 1.3 mile home range will be impacted by implementation of the proposed project; however, the pair's 0.7 mile territory will not. Additionally, the private lands between the Browns Mountain pair and the construction and project implementation zone are in young plantations and are unsuitable for nesting, foraging and roosting. Based upon available habitat, this pair of owls is likely utilizing the drainage in Union Gulch and buffered to the south by Browns Mountain and therefore, unlikely to have a significant disturbance from project implementation.
6. On Federal lands, a small portion of northern spotted owl habitat that will be removed occurs outside of critical habitat unit (CHU) CA-33, including 0.44 acres of nesting and roosting habitat designated as late-successional reserve (LSR), and 1.09 acres of nesting

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and roosting, 0.44 acres of foraging, and 4.63 acres of connectivity designated as matrix. A portion of LSR (22.12 acres) of northern spotted owl habitat overlaps with critical habitat; those effects will be discussed in the critical habitat analysis. This suitable habitat outside of CHU CA-33 currently has no occupied northern spotted owl activity centers. Therefore, effects to northern spotted owl are expected to be discountable due to the low likelihood of use of this area at this time.

Bald Eagle

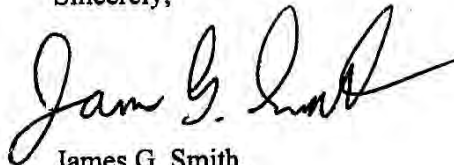
1. The transmission line is designed to minimize electrocutions of large birds, including bald eagle, following the suggested practices recommended by the Avian Power Line Interaction Committee (APLIC 2006).
2. At the two Trinity River crossings the transmission line will be marked with the best technology currently available to alert birds to the presence of an obstruction.
3. The proposed action would avoid disturbance to known active nests during the courtship, breeding and nesting period from January 1 through July 15, and any construction activity would be restricted within one-quarter mile of an active home range.

The Forest also determined that the proposed Project *may affect, but is not likely to adversely affect* the Pacific fisher (*Martes pennanti*); a candidate species for Federal listing. Although the Service does not concur on determinations for non-listed species, we do acknowledge your determination and are fully supportive of the conservation measures developed for the Pacific fisher for the Project.

The Service has reviewed the information provided in your biological assessment, and acknowledges the Forest's determination that the proposed action would have *no effect* on the following federally threatened species: marbled murrelet (*Brachyramphus marmoratus*) and California red-legged frog (*Rana aurora draytoni*). Therefore, no further action pursuant to the Act is necessary regarding these federally listed entities *unless new information reveals effects of the proposed action that may affect these species in a manner or to an extent not considered*, or a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding this letter or the attached biological opinion which addresses effects of the proposed action on the northern spotted owl, please contact Keith Paul of my staff at 530-527-3043.

Sincerely,



James G. Smith,
Project Leader

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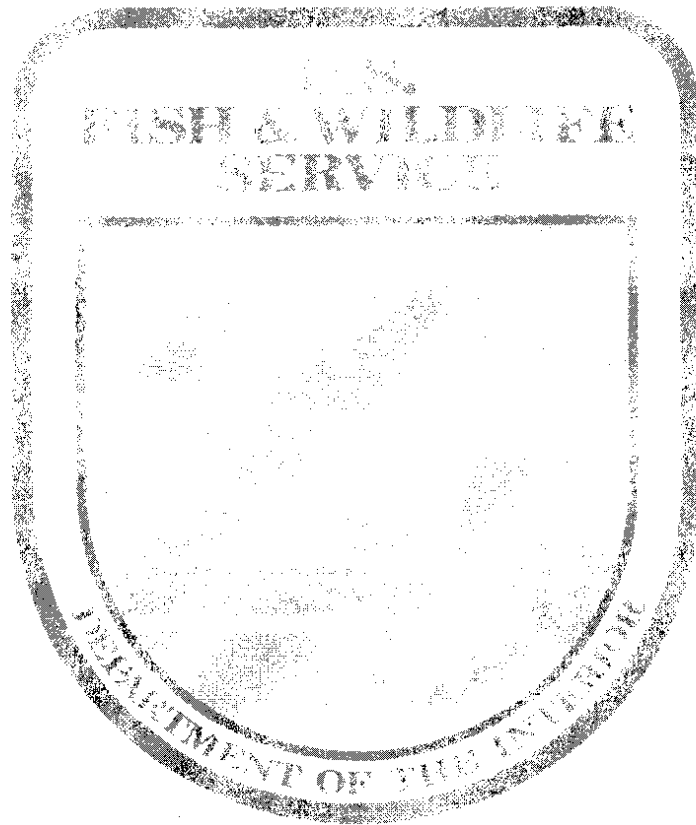
Enclosure: Biological Opinion

cc: Kelly Wolcott, Forest Wildlife Biologist
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**Formal Consultation for the
Trinity Public Utility District Direct
Interconnect Project
(81330-2008-F-0001)**



**Headquarters
Shasta-Trinity National Forest**

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BIOLOGICAL OPINION

Introduction

This document transmits the U.S. Fish and Wildlife Service's (Service) Biological Opinion (BO) based on our review of the proposed action and its effects on designated critical habitat for the northern spotted owl (*Strix occidentalis caurina*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

This BO is based on information provided by the following: the Trinity Public Utility District (PUD) Direct Interconnect Project Biological Assessment (BA) (USDA Forest Service 2007); Addendum to the Trinity PUD Direct Interconnect Project BA (USDA Forest Service 2007); Draft Environmental Impact Statement for the Trinity Public Utility District Direct Interconnect Project (USDOE 2007); other documents as referenced; telephone and email correspondence and site visits to the project area. Additionally, this BO references information contained in the Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning documents within the Range of the Northern Spotted Owl (USDA Forest Service and USDI Bureau of Land Management 1994a), A Range-wide Baseline Summary and Evaluation of Data Collected Through Section 7 Consultation for the northern spotted owl and its Critical Habitat: 1994-2001 (USDI Fish and Wildlife Service 2001), and updates to this report conducted as needed by the Service (most recently completed on August 16, 2007).

Consultation History

Northwest Forest Plan

On October 8, 1993, the Secretaries of Agriculture and Interior (Secretaries) initiated formal consultation on the preferred alternative (Alternative 9) in the Final Supplemental Environmental Impact Statement on Management for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (FSEIS) (USDA Forest Service and USDI Bureau of Land Management 1994b). On February 10, 1994, the Service issued a BO determining that implementation of the preferred alternative was not likely to jeopardize the continued existence or adversely modify critical habitat of any listed species. The Service rendered the BO on Alternative 9 based on the assumption that all proposed projects would be consistent with the ROD, and noted that all proposed projects conducted pursuant to the FSEIS, that may affect listed species, would be submitted to the Service for section 7 consultation (USDI Fish and Wildlife Service 1994). On April 14, 1994, the Secretaries signed the ROD adopting an amended Alternative 9. The Service subsequently determined that because changes in the amended version of Alternative 9 - herein referred to as the Northwest Forest Plan (NWFP) - were relatively minor, re-initiation of consultation on the ROD was not required. However, the NWFP is programmatic in nature and did not address site-specific activities and their effects on listed species or their designated critical habitats. These specific assessments were deferred to future consultations in which more specific information on baseline conditions and proposed project actions could be incorporated.

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Shasta-Trinity National Forest Land and Resource Management Plan

The Service followed up the NWFP range-wide consultation with a consultation addressing the Shasta-Trinity National Forest (STNF) Land and Resource Management Plan (LRMP) (USDA Forest Service 1995). The LRMP was prepared to guide natural resource management activities and establish management standards and guidelines for the STNF. On April 26, 1995, the Service issued a BO determining that implementation of the LRMP was not likely to jeopardize the continued existence of the northern spotted owl (USDI Fish and Wildlife Service 1995).

Level-One Coordination on the Trinity PUD Direct Interconnect Project

Throughout the consultation process, the Service telephoned or corresponded through electronic mail with representatives from the Forest Service (Forest), the Western Area Power Administration (Western), and the Bureau of Land Management (BLM).

On September 15, 2005, interagency coordination on the Trinity PUD Direct Interconnect Project began when representatives of the Forest, Service and Western visited the project area to discuss the project and the needs of the three Federal agencies involved.

On July 11, 2006, another meeting of the Forest, Service and Western was held to review field conditions, discuss the status of the project, changes in the project description, level of National Environmental Policy Act (NEPA) documentation and staff assignments.

On July 21, 2006, a draft BA was provided to the Service for review.

On October 30, 2006, a field review of watershed crossings was attended by the Service, Western and the National Marine Fisheries Service (NMFS).

On January 7, 2007, a second draft BA was sent to the Service and Forest for review and comments. Comments were sent to the Forest and Western on February 20 and April 19, 2007.

On March 6, 2007, the Service, Forest, BLM and Western representatives met to discuss comments on the draft BA and mitigation/compensation for the removal of northern spotted owl suitable habitat.

On April 16, 2007, the Service, Forest and Western representatives met to discuss and refine comment responses and the mitigation/compensation for the proposed project.

On August 14, 2007, the Service, Forest, BLM and Western held a conference call to discuss northern spotted owl LOPs. Based on that conference call, an addendum to the BA was drafted and finalized on August 15, 2007.

On August 17, 2007, a final BA was provided to the Service. After receiving the final BA, it was determined by the Service that Table 1 (Spotted owl habitat types crossed by land

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owner/manager) was insufficient in detail and needed further clarification to allow the Service to complete a proper analysis of the Trinity PUD Direct Interconnect Project.

On October 2, 2007, a new BA was submitted to the Service at which point formal consultation was initiated. The new BA incorporated detailed information regarding the removal of northern spotted owl (*Strix occidentalis caurina*) critical habitat, late-successional reserve and matrix lands across the two Federal land management agencies. This new information was represented in table format and replaced the existing Table 1 in the final BA received by the Service on August 17, 2007.

The STNF is using a species list obtained from the Fish and Wildlife Service website (<http://arcata.fws.gov/specieslist/speciesreport.asp>) on July 25, 2007. The STNF has followed processes outlined in the Streamlined Consultation Process and the Service has provided technical expertise where appropriate.

A complete administrative record of this consultation is available and on file at the Service's Red Bluff Fish and Wildlife Office in Red Bluff, California.

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1 Description of the Proposed Action

1.1 Project Description

1.1.1 *Location of Proposed Action*

The project is located in Trinity County, California, in Sections 22, 27, and 34, T. 34 N., R. 8 W.; Sections 3, 4, 7, 8, 9, 17, T. 33 N., R. 8 W.; and Sections 1, 2, 10, 11, 15, 19, 20, 21, 22, T. 33 N., R. 9 W., Mt. Diablo Principal Meridian.

1.1.2 *Purpose and Need for Action*

Purpose and Need for the Western Area Power Administration

The existing electrical transmission facility, owned and operated by Pacific Gas and Electric (PG&E), undergoes frequent outages, particularly during winter. Consumers in this area routinely see nearly 20,000 consumer hours per year in outages according to Trinity PUD. Many of the outages last three to four days in the winter before power is restored. During this time many customers are without heat and power. Trinity PUD and its customers need reliable electric service as provided for in the Trinity Division Act of August 12, 1955. The proposed action would enhance the reliability of electrical service to Trinity PUD customers by establishing a new direct interconnection with the Central Valley Project (CVP) transmission system at the Trinity PUD Substation. The purpose of the proposed action is to provide a direct interconnection with the transmission system that would enhance the reliability of service to Trinity PUD consumers.

PG&E does not have a maintenance crew in this area, and in the case of a power outage, must mobilize crews from further south, requiring long wait times between the reporting of the outage and initiation of the repair. By installing their own line, Western and Trinity PUD would be able to respond much more quickly to outages and significantly reduce the duration of the outage. In addition, power delivery to Trinity PUD across PG&E's system is a much longer path than the Proposed Project. The longer path, through rugged and remote locations, would be expected to have a higher risk of outages from storms and falling trees than the much shorter proposed route.

Purpose and Need for the USDA Forest Service

The Forest purpose and need for the proposed action is to respond to Western's request to cross Forest-managed lands with portions of the proposed transmission lines. The Forest's Federal action would be to issue a construction, operation and maintenance (COM) plan authorizing the construction, operation and maintenance of a utility corridor for a new 60-kilovolt (kV) transmission line on National Forest System lands. After the Forest issues a temporary construction permit for the right-of-way (ROW) across National Forest System lands, Western will provide the Forest with a detailed COM plan prior to construction. The project COM plan, when approved, would be incorporated into by reference in the permit. The COM plan will cover all project construction, reconstruction, maintenance and decommissioning; placement of poles/towers, pulling wire, vegetation removal for emergency and routine maintenance of the

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transmission line, fuels treatment, and noxious weed prevention and control. The Forest needs to authorize a timber sale contract for the purchase and clearing of vegetation for the ROW corridor by Western. The temporary construction permit would include the timber sale contract. Clearing of vegetation would occur only within the specified ROW and on some access roads. The permit and the COM plan would incorporate implementation of specified mitigation measures based on the environmental analysis in the Environmental Impact Statement.

The Forest action to issue a permit to Western to provide for continued use and new development of transmission facilities and to establish utility corridors as needed to accommodate existing and planned facilities, is consistent with and support the applicable goals, standards and guidelines of the 1995 Shasta-Trinity National Forest Plan and the 2004-2008 USDA Forest Service Strategic Plan, including;

- Strategic Goal 4: help meet energy resource needs, and
- Objective 4.1: work with other agencies to identify and designate corridors for energy facilities, improve permit application processing efficiency and establish appropriate land tenure (including transferability clauses) in easements and other authorizations to provide for long-term project viability.

Purpose and Need for the USDI Bureau of Land Management

The BLM purpose and need for the proposed action is to respond to Western's request to cross BLM-managed land with portions of the proposed transmission line and access roads. BLM's action will be to issue a ROW to Western to authorize the construction and maintenance of a transmission line and ancillary facilities. The proposed transmission line conforms with BLM strategic goals by serving current and future publics through the improved system reliability to customers of the Trinity PUD. A timber sale contract will be completed to allow for the removal of merchantable timber within the ROW.

1.1.3 Summary of Proposed Actions

The U.S. Department of Energy, Western's Sierra Nevada Regional Office is proposing to construct, own, operate and maintain the Trinity PUD Direct Interconnection Project. The proposed action includes three main segments:

- Segment 1 includes the removal of about 5.3 miles of existing 12-kV distribution line from Trinity Power Plant at Trinity Dam to a tap point about 0.75 miles west of Lewiston Dam and construction of a new 60-kV transmission line to replace the 12-kV line on an expansion of the existing ROW.
- Segment 2 includes construction of a tap structure with three-way switch equipment on the new 60-kV transmission line at the location near Lewiston Dam and a radial 1.2-mile tap line south to the existing Lewiston Substation on Trinity Dam Road, parallel to an existing distribution line.

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- Segment 3 includes construction of a new 60-kV transmission line on a new ROW from the tap point west about 8.5 miles south of Weaverville on the east side of Highway 299.
- The proposed action also includes construction of a the new Weaverville Switchyard, which would be located about two miles south of Weaverville on the east side of Highway 299.

In segment 1, Western would remove the existing conductor and poles for 5.3 miles of the Trinity-Lewiston 12-kV distribution line (Trinity PUD line). Then the existing Trinity PUD line cleared ROW would be expanded from about 20 feet to 80 feet to accommodate installation of a new 60-kV transmission line. Segment 1 would follow the existing ROW from Trinity Dam down river approximately 6.5 miles toward Lewiston. Segment 1 crosses the Trinity River Fish Hatchery. The existing corridor runs through the steep and rugged terrain of the Shasta-Trinity National Forest, crossing ridge tops and gullies. The land in Segment 1 is public land administered primarily by the USDA Forest Service and portions of it are within the boundaries of the Shasta-Trinity National Recreation Area. However, about one mile of Segment 1 is administered by the Bureau of Reclamation (BOR), 0.5 mile is owned by Sierra Pacific Industries (SPI) and 0.25 mile is privately owned. Construction and maintenance of Segment 1 would generally use existing access roads for the 12-kV line. However, an approximate total of 0.5 mile of new access road would be required, comprised of several short spurs.

For Segment 2, Western would acquire an 80-foot ROW to build a new 60-kV transmission line, approximately one mile in length, south to the existing Trinity PUD Lewiston Substation. A steel pole with a three-way switch would be installed near mile 6.5 to accommodate the incoming line from Trinity Substation, the proposed tap line down to the Lewiston Substation and a new line segment to the proposed Weaverville Switchyard. Segment 2 would parallel an existing Trinity PUD distribution line along Trinity Dam Boulevard and Rush Creek Road and the Trinity River between the two points. Segment 2 crosses a mix of National Forest, SPI, BLM and privately owned land. Existing access roads associated with the distribution line would be used, with newly constructed short spurs up to the new line from the existing access roads. Trinity Dam Boulevard and Rush Creek Road follow the Trinity River on the west side in this location and the existing Trinity PUD distribution line is west of the road. The proposed tap line would thus be between the proposed line and these roads.

For Segment 3, Western would acquire an 80-foot wide ROW to build a new 60-kV transmission line from the tap structure near mile 6.5 (near Lewiston) to a new switchyard to be constructed at Weaverville. Segment 3 would be approximately 8.5 miles long. Approximately one mile of Segment 3 would parallel the existing Pacific Gas and Electric Company (PG&E) Cottonwood-Humboldt 115-kV line. The Segment 3 corridor would also run through steep and rugged terrain and would closely follow an existing main logging road. The land in Segment 3 is owned primarily by SPI and managed for timber production. The remaining land is managed by BLM and about 0.25 mile is privately owned. The proposed action would require new ROW and use existing and upgraded existing access roads and new short spurs roads.

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As part of the proposed action, Western would also construct a small switchyard south of the town of Weaverville. The new substation would allow for the proposed action to connect with the existing PG&E radial 60-kV line known as Trinity-Douglas City Transmission Line. The existing PG&E line would be acquired by Trinity PUD. Permission to occupy the proposed Weaverville Switchyard would be initially obtained through a ROW grant from the BLM. Eventually, Western would request conveyance of the site through sale, pursuant to Section 203 of the Federal Land Policy and Management Act (FLPMA) 43 U.S.C. § 1713, as applicable. Access to the proposed Weaverville Switchyard would be off State Highway 299, using an abandoned section of that highway.

1.1.4 Transmission Line Components

The major component of the proposed action would be an approximately 16-mile, 60-kV overhead transmission line to be called the Trinity PUD Direct Interconnection. The proposed action would connect to Western's Trinity Substation at Trinity Power Plant. Trinity Substation is located near Trinity Dam, on Power House Road. The proposed action would connect three conductors and a fiber optic communications cable to equipment already installed in the substation.

1.1.4.1 Conductors and Insulators

The Trinity PUD Direct Interconnect Project would consist of a single-circuit, single-phase, 60-kV transmission line with aluminum conductor steel reinforced (ACSR) conductors arranged in a horizontal or triangular configuration. A combination fiber optic cable and ground wire would be strung overhead to provide communications capability and lightning protection. Composite horizontal line post insulators would be used.

1.1.4.2 Poles

The 60-kV new line would be constructed on wood poles ranging from 50 to 105 feet tall. In many areas, the poles would be shorter than the surrounding trees. Each wood pole would require an augered hole with native backfill, resulting in average 8-10 feet of pole in the ground. The holes would be dug by hand in locations where an auger truck could not be brought in.

The span between poles would average 350 feet, ranging from a minimum of 100 feet to a maximum of 500 feet, with some longer or shorter spans depending on topography and other factors. There would be an average of 16 pole locations per mile, with an approximate total of 261 pole locations for the entire project. Pole locations would consist of either single wood poles or three-pole turning structures. Segment 1 would require approximately 102 new poles; Segment 2 would require approximately 17 new poles; and Segment 3 would require approximately 142 new poles. Pole heights, locations and span lengths vary and would be determined by the following factors: natural terrain and topography; structural limitations; costs; visual considerations; existing and proposed land uses; crossings of manmade features such as roads, canals and telephone lines; and other criteria that may be unique to the project.

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Of the approximately 261 structures, about 11 would be three-pole turning structures. The turning structures and approximately 95 additional single poles would be guyed with wire cable to anchors in the ground. The anchors would consist of steel screw anchors in soil, and eight-foot anchor rod with plate in fractured rock, or a grouted rod in solid rock. Anchors would be buried approximately six feet in the ground. Anchor holes would be augered where vehicle access is possible, drilled with hand power augers or hand-dug otherwise. Conductors exert various stresses on poles; from changing the angle or direction of the line, expansion and contraction, weight of the conductors (greatly increased by ice loading) and upward forces on poles in low areas. Guys would be required to support the poles at stressed locations where the angle of the line would change, at dead-end structures and on some poles to keep them from being pulled out of the ground. Single poles could have up to four guys and three-pole turning structures up to 12 guys. Some anchors would fall outside of the normal 80-foot ROW; in those locations additional clearing would be required, and additional ROW needs determined and obtained. Typically a 10-foot wide path to the anchor would be needed, with five feet beyond the anchor added as well. These areas, called "guy pockets," would be a very small addition to the land required for the 80-foot ROW. As a rule of thumb, the guy anchors would be about the same distance from the base of the pole as the height of that pole; e.g., a 75-foot guyed pole would typically have the anchors 75 feet from the base of the pole. In certain locations in steep terrain, distances could be somewhat longer or shorter. Many of the anchors would fall within the 80-foot ROW, depending on the angles needed for the guys to properly support the pole.

In addition to the wood poles, up to ten self-supporting Cor-ten steel structures, direct embedded or within rectangular concrete foundations, may be required for large spans or for increased stability. A steel structure with a three-way switch would be installed near mile 6.5, west of the Trinity River Fish Hatchery. The switch, and associated operating shafts and mechanism housing would be installed on the tap structure. The tap structure would be constructed of Cor-ten steel, which is self-rusting to a flat, dark brown surface, resulting in a less visible structure.

1.1.4.3 Trinity Substation

The proposed transmission line would originate at Western's Trinity Substation, located near Trinity Dam. The proposed line would connect to equipment in the substation. The fiber optic cable for the remotely operated switches would also connect to communications equipment inside the substation.

1.1.4.4 Lewiston Substation

Lewiston Substation is a small existing Trinity PUD distribution substation. The substation is located on Rush Creek Road, near the City of Lewiston, and is unmanned. The proposed action would primarily require electrical equipment modifications within the currently fenced area, such as additional switches and the termination of the fiber optic cable to the remotely operated switches.

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1.1.4.5 Weaverville Switchyard

Installation of a new small switchyard would be required for the Proposed Project to connect with PG&E's existing 60-kV Trinity-Douglas City Transmission Line. The new switchyard would be located on BLM property about two miles south of the center of Weaverville on the east side of State Highway 299. Access to the proposed switchyard would be off State Highway 299, using an abandoned section of that highway. The proposed new Weaverville Switchyard would have a footprint of approximately 90 by 110 feet.

1.1.5 Construction Activities

1.1.5.1 Right-of-Way Clearing

ROW clearing for the transmission line and new roads would require removing trees. ROW clearing is done for the following reasons: to construct access roads and construction yards; to assemble and erect structures; to prepare for efficient installation of conductors; to provide for adequate and required electrical clearance for energized lines; to ensure system reliability; and to provide safe working conditions for these tasks. Conductor clearance is extremely important to prevent power outages, which may impact the power system in a very large region and to prevent the line from being an ignition source for wildfires. To the extent possible, understory plants, shrubs and low-growing brush or tree species would be left in place to reduce erosion potential and visual impacts and to preserve habitat. When crossing ravines, especially those with riparian areas, relatively more vegetation would be left intact where conductors would be further from the ground. These ROW clearing procedures would promote a stable, low-growing plant community on the ROW, such as grasses and shrubs. This type of plant community would be compatible with transmission line facilities, serving as an environmentally acceptable and useful ground cover, and naturally retarding the re-growth of tall-growing vegetation. The frequency of future ROW maintenance operations and potential interruption of service would also be reduced.

1.1.5.2 Clearing Requirements

In Segment 1, the existing 5.3 mile long ROW would be used, but expanded from 20 feet wide to 80 feet wide; therefore, include an additional 30-foot swath on each side of the existing 20-foot ROW except in areas near cliffs or roads, when the total 80-foot clearing may be on one side. The remaining 1.2 miles of Segment 1 would be a new ROW. The total acres removed/disturbed for the ROW in Segment 1 would be approximately 52 acres. For three-poled turning structures and guyed poles, small additional area outside the 80-foot ROW would be required for guy pockets. In addition, a cleared area of 200 by 50 feet would be required at all three-poled structure locations and some additional locations for pulling and tensioning conductors. These areas would be aligned with the transmission line in both directions so that the pulling would not be at an angle to the segment of transmission line. Locations would be largely those cleared and used for constructing the 12-kV distribution line. Trinity PUD would abandon its existing ROW so that Western could obtain the new, wider ROW incorporating the old ROW. Once the ROW is cleared, danger trees would be identified and selectively removed. Danger trees are trees outside of the designated ROW that could fall into and short out or take down the transmission line.

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Clearing activities for Segments 2 and 3 would occur in a similar manner as described above for Segment 1. The total acres removed for the ROW in Segment 2 would be approximately 10 acres while the total acres in Segment 3 would be approximately 85 acres. For all segments, guy wire buffer areas and site pull areas outside of the ROW will disturb approximately 22 acres.

1.1.5.3 Access Requirements

Surface access, either by vehicle or walk-in, to each pole location would be required during construction. Some access roads and spur roads to portions of the transmission line corridor were built 10 to 50 years ago. Many of these roads are still used for access to the existing 12-kV Trinity PUD line. These roads, with repair as necessary, would be used for access. Existing access roads would be used, with newly constructed short spurs up to pole locations from the existing access roads where needed.

Upgrading existing access roads involves blading and/or placing rock and/or gravel within the confines of the disturbed roadbed. There are approximately 9.5 miles of existing access roads on the STNF. Of these, about 3.0 miles of access road would need improvement, although work may be confined to segments of these roads. Drainage crossings would be accomplished by hand-placing local rock in the roadbed. No culverts would be emplaced due to risk of plugging and blow-out, and no soil fill is anticipated. Approximately 1.0 mile of new access roads on the STNF would be constructed. Off the STNF approximately 2.4 miles of the existing 8.7 miles of roads would need to be improved. The entire proposed action would require about 2.0 miles of new access road to be constructed, all short dead-end spurs from existing access roads to pole locations. These new spur roads would be left in place, but not permanently maintained. In other words, the grading would remain, but they would be allowed to revegetate, and may be blocked at the request of the land manager/owner. All areas disturbed by upgrading of existing roads and the construction of new spur roads will impact approximately 3.5 acres.

1.1.5.4 Construction Staging Areas

Segment 1 is estimated to require two construction staging areas, a headquarters facility and two helicopter landing pads, all temporary facilities. In general, construction staging areas would be about 150 by 150 feet in size and would consist of a lay-down area and/or helicopter landing pad. Construction staging areas would be open areas not requiring clearing of trees. After construction activities, construction staging areas would be restored. Approximately 10 acres will be disturbed in Segment 1 due to construction of staging areas, a headquarters facility and two helicopter landing pads.

Segment 2 would use the two construction staging areas and log decking areas developed for constructing Segment 1, as described above.

Segment 3 is estimated to require the construction of two construction staging areas, a headquarters facility and two helicopter landing pads, the latter of which may be combined with the construction staging areas. The headquarters facility for Segment 3 would likely be located along Browns Mountain Road within the ROW. Approximately 18 acres will be disturbed in

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Segment 3 due to construction of staging areas, a headquarters facility and two helicopter landing pads.

1.1.5.5 Pole, Line and Conductor Removal

All poles currently supporting the existing 12-kV transmission line in Segment 1 would be removed by cutting them off at ground level. The old cedar poles are not chemically treated and would be left along the edge of the ROW, reused by the landowner or manager or cut up and placed in the slash piles for burning, according to the preference of the landowner or manager. Hardware, conductors and insulators would be removed from the ROW and reused or recycled. Most of the components of the old line are reusable or recyclable.

1.1.5.6 Pole Delivery and Installation

Delivered by truck, pressure-treated wood utility poles would be stacked on supports at staging areas so they are off the ground and grouped according to lengths. Utility poles would be preserved using oil-borne copper naphthenate, which prevents decay, insect damage and hardening of the pole to allow maintenance crews to climb the pole safely. Poles are treated prior to transporting and installing them at the project site.

In areas with good ground access, workers would use a derrick truck to install poles. The crew would first set anchors for the pole and then dig a hole with an auger, attached to the boom of the derrick truck. After the pole is set into the hole, it would be adjusted so that it is vertical and each hole would be filled with the excavated soil. Any left over soil will be spread around the base of the upright pole.

At each structure location on the ROW not accessible by conventional construction equipment, a foundation crew would first set anchors for the pole, and then excavate a hole, either with an auger attached to a tracked vehicle or by hand (hand auger and/or pick and shovel). Then from the staging area, a helicopter would be used to fly the poles to the structure site within the ROW and lowers them into place in the previously excavated holes. Poles would be adjusted and each hole would be backfilled with excavated soil. Any leftover soil would be spread around the base of the upright pole.

Blasting to facilitate excavating the holes for installing the transmission line wood poles would be required if large rocks (greater than three feet in diameter) or bedrock material is encountered. The blasting operation would consist of hand drilling or pneumatically drilling a small hole (less than two inches in diameter and four feet to six feet deep), then placing explosive material in the hole (approximately equal to a one half stick of dynamite). The resulting small, controlled blast would fracture the rock with little or no fly rock rising from the site. The blast would be like a loud thump and the ground surface would be raised slightly (less than one foot), with some smoke and dust also rising from the site.

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1.1.5.7 Conductor Installation

Conductor installation would involve setting up stringing equipment; hauling cable reels to the tensioning site; and distributing, assembling and installing insulators and insulator hardware at the pole sites. Conductors would be installed by tension stringing. Tension stringing is generally used to prevent the conductors from touching the ground or objects underneath the transmission line. Material and equipment would be delivered by truck or helicopter. Conductors, tensioner, puller and other related equipment and materials would be assembled at staging areas. These sites, about 0.25 acres in size, would be located along the route at two to four mile intervals. Some could be located off the ROW where the line angles more than 15 degrees. A sock line would be pulled between poles through the conductor sheaves by construction personnel, vehicles, tractors or helicopter, and the conductor would be pulled to a pre-calculated tension. Conductor splicing sites would be located at two-mile intervals along the ROW. The final phase of construction would include final alignment of the conductors, termination and final attachment.

1.1.5.8 Construction of the Weaverville Switchyard

The proposed new Weaverville Switchyard would have a footprint of approximately 90 by 110 feet, which would be located next to an abandoned section of old State Highway 299. An old highway section would be used for access to the new switchyard.

Two spur lines would be required to connect to the new switchyard to PG&E's 60-kV transmission line, which would be acquired by Trinity PUD. The span of this 60-kV line between the two spur line connection points would be removed. The spur lines would replace one span of the existing line, thus looping the line in and out of switching equipment in the proposed new switchyard. In addition, 12-kV station service would be required from the new switchyard to Trinity PUD's existing distribution line to provide power to the new switchyard.

1.1.6 Project Operation and Maintenance

Typical activities associated with operating and maintaining transmission lines would occur once the new line was constructed. The proposed transmission line system would operate at 60-kV. The amount of power transferred along the conductors would vary depending on seasonal and time-of-day loads, as well as other system demands. Western's power system dispatchers would direct day-to-day and emergency transmission line operation in accordance with Western's Power System Operations Manual (PSOM) and in cooperation with adjacent control areas and systems. Western would be responsible for maintaining the proposed transmission system by monitoring, testing and repairing the line and terminal equipment. Maintenance crews would likely be provided by Trinity PUD, since they would be located closest to the proposed transmission line location. Typical maintenance activities would include:

- Periodic routine aerial inspections with emergency aerial inspections after storms, severe wind, lightning or other weather factors or reported vandalism.
- Periodic and emergency ground inspections, normally no more often than once a year.

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- Routine maintenance to inspect and repair damaged structures.
- Wood pole inspection and maintenance, if necessary.
- Emergency maintenance to immediately repair transmission lines damaged by storms, floods, vandalism or accidents. Emergency maintenance would involve prompt movement of crews to repair damage.
- Access road inspection and maintenance to regrade and repair erosion control features and gates.
- Vegetation management activities would be performed, as needed, to maintain conductor clearance and include cutting, trimming, lopping and clearing trees. Low-growing shrubs and brush would be retained for ground cover and erosion control purposes.
- Noxious weeds would be controlled if found. Application of herbicides may be necessary for the control of noxious weeds and to prevent regrowth of undesirable or incompatible vegetation. Herbicide application would be in accordance with Western's Integrated Vegetation Management Environmental Guidance Manual (Western 2003).

1.1.7 Conservation Measures

The following interdependent actions would reduce or avoid impacts to forest resources, particularly wildlife resources:

- Limited Operating Periods (LOPs), also called construction windows, would be implemented to minimize effects to the northern spotted owl. From February 1 through July 10, all noise and smoke generating activities would be prohibited within ¼ mile of a spotted owl home range. In addition, all vegetation removal/cutting/burning would be prohibited from February 1, through September 15, within suitable nesting/roosting habitat. These LOPs may be lifted if surveys, using currently accepted protocols indicate specific areas are not occupied by breeding owls or with the mutual consent of the Service.
- Leave snags that would not create a safety hazard or hinder reliable operation of the line.
- Retain all hardwoods that would not become a safety hazard or hinder reliable operation of the line.
- Intermittent and ephemeral streams that display annual scour would have a minimum 150-foot Riparian Reserve based on the average maximum height of 200-year-old trees for the site, providing it does not interfere with human safety or line reliability.
- Fish bearing streams that display annual scour would have a 300-foot Riparian Reserve on both sides, based on twice the average maximum height of 200-year old trees for the site, providing it does not interfere with human safety or line reliability.
- Selective thinning would occur in the Riparian Reserves to enhance worker safety and line reliability.

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- During construction and maintenance activities, speed limits on non-public access roads would not exceed 15 miles per hour.
- Prior to entering the project area, all personnel would be required to go through safety and environmental training. This training would deal with environmental laws, the species of concern, the reasons they are protected, and measures to ensure the safety of workers and protected biological resources.

1.1.7. Mitigation Measures

Western, in cooperation with the Forest, BLM and the Service developed a Northern Spotted Owl Habitat Mitigation Plan. This plan was incorporated into the proposed action with the objective of compensating for the removal of critical habitat, nesting and roosting habitat and habitat that is capable of becoming nesting and roosting habitat in the future. The plan states that Western will fund habitat improvements (i.e., plantation thinning, fuels reduction) by the Forest and BLM at a ratio of three acres improved for each acre removed in areas capable of becoming spotted owl nesting and roosting habitat (16.97 acres $\times$ 3 = 50.9 acres improved), five acres improved for every acre removed in critical habitat (26.21 acres $\times$ 5 = 131.07 acres improved) and seven acres improved for each acre removed in existing nesting and roosting habitat (11.31 acres $\times$ 7 = 79.19 acres improved). Based on these ratios, on-the-ground improvements would treat approximately 261 acres at an average cost of \$2,744 per acre removed for an estimated total cost of \$716,616.75. See Appendix A for further clarification on how this mitigation estimate was derived.

1.2. Definition of the Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action, including interrelated and interdependent actions, and not merely the immediate area involved in the action (50 CFR §402.02). The action area for the Trinity PUD Direct Interconnect Project includes all lands within a 1.3-mile radius of the project site [i.e., a 1.3 mile buffer extending out from the transmission line right-of-way (ROW), access roads, helipad staging areas, construction headquarters, construction staging areas, switchyard, and guy wire buffers and pulling stations outside of the ROW]. The action area lies within several land ownerships including the Forest, BLM and Private Lands. Land allocations on Forest Service lands include Matrix and Late-Successional Reserve (LSR) RC-334. In addition, northern spotted owl critical habitat unit (CHU) CA-33 occurs on both Forest and BLM lands. The proposed action lies within the Western Klamath Eco Zone located in the Klamath Province.

The project area consists of a right-of-way 80 feet wide by 15 miles long with up to 20 miles of access road improvement and new construction. On the STNF, approximately 9.5 miles of access roads are present with 3.0 miles of those needing improvement and an additional one mile that needs to be constructed. Off the STNF, there are 8.7 miles of access roads with approximately 2.4 miles that would need varying levels of improvement in places and another 0.5 miles that would need to be constructed. Six helipad staging areas, two construction headquarters, four construction staging areas, 37 pulling locations outside the ROW and 98 structures would require guy wires for stability. Total acreage that will be disturbed and/or removed is approximately 256

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acres. Approximately 91 acres of that disturbance or removal will impact northern spotted owl nesting, roosting, foraging, connectivity or capable habitat.

2 Framework For Jeopardy and Adverse Modification Analysis

2.1 Analytical Framework for the Adverse Modification Determination

This BO does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

The following analysis relies on four components to support the adverse modification determination: (1) the *Status of Critical Habitat*, which evaluates the range-wide and provincial condition of designated critical habitat for the spotted owl in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall, as well as the intended recovery function of critical habitat outside the action area at the provincial and unit scales; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

In accordance with Service policy and guidance, the adverse modification determination is made in the following manner: the effects of the proposed Federal action on critical habitat are evaluated with the aggregate effects of everything that has led to the current status of the critical habitat range-wide and, for non-Federal activities in the action area, those actions likely to affect the critical habitat in the future, to determine if, given those aggregate effects, the critical habitat would remain functional (or retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve the intended recovery role for the species with implementation of the proposed Federal action.

The following analysis places an emphasis on using the intended range-wide and provincial scale recovery functions of spotted owl critical habitat and the role of the action area relative to those intended functions as the context for evaluating the effects of the proposed Federal action with other relevant effects. In short, a non-adverse modification determination is warranted if the proposed action is consistent with maintaining the intended recovery role of spotted owl critical habitat in the action area.

Please note that based on the final rule designating critical habitat for the spotted owl (57 FR 1796), a “may affect, likely to adversely affect” determination for spotted owl critical habitat that triggers the need for completing an adverse modification analysis under formal consultation is warranted in cases where a proposed Federal action will: (1) reduce the quantity or quality of

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existing spotted owl nesting, roosting, foraging, or dispersal habitat at the stand level to an extent that it would be likely to adversely affect the breeding, feeding, or sheltering behavior of an individual spotted owl; (2) result in the removal or degradation of a known spotted owl nest tree when that removal reduces the likelihood of owls nesting within the stand; or (3) prevent or appreciably slow the development of spotted owl habitat at the stand scale in areas of critical habitat that currently do not contain all of the essential features, but have the capability to do so in the future; such actions adversely affect spotted owl critical habitat because older forested stands are more capable of supporting spotted owls than younger stands. Adverse effects to an individual tree within spotted owl critical habitat will not trigger the need to complete an adverse modification analysis under formal consultation if those effects are not measurable at the stand level.

3 Status of Northern Spotted Owl Critical Habitat

3.1 Legal Status

On January 15, 1992, the Service designated critical habitat for the spotted owl within 190 critical habitat units (CHUs) which encompass nearly 6.9 million acres across Washington (2.2 million acres), Oregon (3.3 million acres), and California (1.4 million acres) (USDI FWS 1992). Only Federal lands were designated as critical habitat in the final rule (USDI FWS 1992). The spotted owl critical habitat final rule states: "Section 7 analysis of activities affecting owl critical habitat should consider provinces, subprovinces, and individual CHUs, as well as the entire range of the subspecies (page 1823)." The rule goes on to assert the basis for an adverse modification opinion should be evaluated at the provincial scale (page 1823). On June 12, 2007, the Service issued a proposal to revise the existing designation of critical habitat for the spotted owl.

3.2 Primary Constituent Elements

Primary constituent elements (PCEs) are the physical and biological features of critical habitat essential to a species' conservation. PCEs identified in the spotted owl critical habitat final rule include those physical and biological features that support nesting, roosting, foraging, and dispersal (USDI FWS 1992). Features that support nesting and roosting habitat typically include a moderate to high canopy (60 to 90 percent); a multi-layered, multi-species canopy with large (> 30 inches diameter at breast height) overstory trees; a high incidence of large trees with various deformities (e.g., large cavities, broken tops, mistletoe infections, and other evidence of decadence); large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for owls to fly (Thomas et al. 1990). Foraging habitat generally consists of attributes similar to those in nesting and roosting habitat, but may not always support successfully nesting pairs (USDI FWS 1992). Dispersal habitat, at minimum, consists of stands with adequate tree size and canopy closure to provide protection from avian predators and at least minimal foraging opportunities; there may be variations over the owl's range (e.g., drier sites in the east Cascades or northern California) (USDI FWS 1992).

3.3 Conservation Role of Critical Habitat

Spotted owl critical habitat was designated based on the identification of large blocks of suitable habitat that are well distributed across the range of the spotted owl. Critical habitat units were intended to identify a network of habitats that provided the functions considered important to maintaining stable, self-sustaining, and interconnected populations over the range of the spotted owl, with each CHU having a local, provincial, and a range-wide role in spotted owl conservation. Most CHUs were expected to provide suitable habitat for population support, some were designated primarily for connectivity, and others were designated to provide for both population support and connectivity. Approximately 70 percent of suitable habitat in CHUs overlaps with Northwest Forest Plan (NWFP) Late-successional Reserves on a range-wide basis and will therefore be managed to protect and enhance habitat characteristics.

3.4 Current Condition of Critical Habitat

3.4.1 Range-wide

In 1994, the Final Supplemental Environmental Impact Statement (FSEIS) for the NWFP established that 3,141,987 acres of NRF habitat existed within spotted owl CHUs on Federally administered public lands (USDA Forest Service and USDI Bureau of Land Management 1994b). To assess changes to the baseline condition since implementation of the NWFP, the Service relies on information in section 7 consultations and available information on natural events. Hereafter, effects to critical habitat refer to nesting, roosting, and foraging habitat within spotted owl CHUs. Across the range of the spotted owl between 1994 and August 16, 2007, the Service has consulted on the removal and/or downgrading of 51,776 acres¹ (1.65 percent of the range-wide evaluation baseline) of critical habitat due to management-related activities (Table 1). The majority of these effects, 31,188 acres, have been concentrated in the Oregon Cascades West and Oregon Klamath Mountains Provinces. In addition, natural events (including fire and insect outbreaks) have resulted in the removal or downgrading of approximately 39,610 acres (1.26 percent) of critical habitat extant in 1994 (Table 1).

Although most provinces within the range of the spotted owl have experienced some degree of habitat loss within CHUs between 1994 and August 16, 2007, total effects have been disproportionately distributed. The majority of effects to critical habitat (96.44 percent) have been concentrated in just six physiographic provinces (Washington East Cascades, Washington West Cascades, Oregon Klamath Mountains, Oregon Cascades East, Oregon Cascades West, and California Klamath) (Table 1). Of the remaining six provinces, one (Oregon Willamette Valley)

¹ Once a consultation is completed, the NWFP and Section 7 Consultation Effects Tracker database is updated to include the consulted-on acres. Additionally, once projects are completed, and monitoring reports submitted, the consulted-on acres in the NWFP and Section 7 Consultation Effects Tracker database are updated to account for action agency projects or portions of projects that were not implemented. Thus, consulted-on acres displayed in the database may increase or decrease and represent the best approximation of consulted-on effects that have and are expected to occur.

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had no designated critical habitat, one (Washington Western Lowlands) had no suitable habitat within critical habitat, and four provinces (Olympic Peninsula, Oregon Coast Range, California Coast Range, California Cascades) had less than one percent of their critical habitat removed and/or downgraded since 1994.

In general, fires have had more of an impact to spotted owl critical habitat in the interior provinces of Washington and California and the southern and interior provinces of Oregon than the coastal provinces. Over 50 percent of spotted owl critical habitat removed and/or downgraded by fire can be attributed to the 1999 Megram Fire that burned in north-central California and the 2002 Biscuit Fire that burned in southwestern Oregon and northern California.

3.4.2 Provinces

3.4.2.1 Washington East Cascades

This province, which contains 18 CHUs, is located east of the Cascade Crest and provides the easterly extension of the spotted owl in Washington.

Between 1994 and August 16, 2007, approximately 10,091 acres of critical habitat (2.92 percent of this province's baseline) have been removed and/or downgraded (Table 1). The majority of effects have been concentrated in the northern half of the province and resulted primarily from the Tyee, Needles, North 25 Mile, and Maple Fires. The largest of these fires, the Tyee, removed and/or downgraded approximately 3,600 acres of suitable habitat from WA-06, WA-09, and WA-11. The Maple Fire removed and/or downgraded an additional 300 acres of suitable habitat from to WA-06. The Needles and North 25 Mile Fires removed and/or downgraded approximately 2,500 acres (23 percent) and 474 acres (28 percent) of suitable habitat from WA-02 and WA-04, respectively. Collectively, the units impacted by these fires are important for the range-wide distribution of the spotted owl as they occur on the eastern and northeastern edge of the species range (Tehan 1991). Additionally, these CHUs provide essential habitat for intra-provincial connectivity (Tehan 1991).

Efforts continue to refine estimates of additional critical habitat lost due to wildfires during recent seasons. Preliminary estimates indicate that the actual total acres of NRF that may have been removed and/or downgraded from critical habitat units in this province due to natural events may be as much as 12,183 ac (nearly 3,700 ac more than the Table 3 value). This preliminary estimate needs to be finalized before it can be entered in the range-wide database for tracking effects on critical habitat.

3.4.2.2 Washington West Cascades

This province, which contains 23 CHUs and the most critical habitat of the Washington provinces, is located west of the Cascade Crest. It is characterized by significant differences in topography and distribution of habitat between its northern and southern portions.

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Between 1994 and August 16, 2007, the Service has consulted on the removal and/or downgrading of approximately 4,870 acres of critical habitat within eight CHUs, representing 0.95 percent of the provincial baseline (Table 1). Although impacts to seven of these units have been relatively minor (less than two percent of their baseline), WA-39 has had 1,776 acres of suitable habitat (45 percent) consulted-on for removal or downgrading. WA-39 is expected to provide connectivity between the Western Cascades and Western Lowlands Provinces and improve the distribution of spotted owls and habitat in the portion of the province impacted by the 1980, Mount Saint Helens eruption (Tehan 1991). Fire has not resulted in measurable impacts to spotted owl critical habitat in this province.

3.4.2.3 Oregon Klamath Mountains

The Oregon Klamath Mountains Province contains 15 CHUs and provides the link between the Oregon Cascades West and Oregon Coast Ranges Province south into California.

Between 1994 and August 16, 2007, this province has had more critical habitat removed and/or downgraded than any other province: 28,677 acres or 9.17 percent of its provincial baseline (Table 1). Of these acres, 17,453 can be attributed to fire while the remaining 11,224 acres are associated with consulted-on activities. Consulted-on effects have been distributed across 12 CHUs and have resulted in relatively minor impacts to most of these units. However, more substantial impacts to suitable habitat have been consulted-on for CHUs OR-63, OR-64, and OR-75. Approximately 12 percent (584 acres) and nine percent (339 acres) of the suitable habitat within OR-63 and OR-64 have been consulted-on for removal or downgrading, respectively. These CHUs were established to provide habitat for NSOs within the western end of the Rogue-Umpqua portion of the I-5 area of concern and to provide inter-provincial connectivity (Tweten 1992). OR-75, which provides an east-west linkage in the southern portion of the Klamath Mountains Province and provides essential NRF, and dispersal habitat in a highly fragmented area (Tweten 1992), has had 11 percent (645 acres) of its suitable habitat consulted-on for removal or downgrading. The majority of fire effects in this province can be attributed to the Biscuit Fire. This fire removed and/or downgraded approximately 23, 46, and 37 percent of the suitable habitat within OR-68, OR-69, and OR-70, respectively. These units were identified for their important contributions to inter- and intra-provincial connectivity and to provide essential NRF and dispersal habitat in areas where habitat is lacking (Tweten 1992).

3.4.2.4 Oregon Cascades West

This province is located in the geographic center of the spotted owl's range and contains more critical habitat (over 894,000 acres) than any other province. It provides links with the Washington Cascades, Oregon Coast Range, Oregon Klamath Mountains, Oregon Cascades East Provinces, and connectivity with the California physiographic provinces.

Between 1994 and August 16, 2007, approximately 21,870 acres (2.44 percent of this province's baseline) have been removed and/or downgraded (Table 1). Consulted-on effects have been widely dispersed within 26 of the 29 CHUs in this province. In general, this has resulted in relatively small impacts to individual units. However, two adjacent units, OR-23 and OR-24,

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have experienced relatively concentrated effects having 215 acres (14.3 percent) and 946 acres (48.8 percent) removed and/or downgraded, respectively. Together these units were identified as being important inter-provincial links between the Coast Ranges and the Oregon Cascades West Provinces (Tweten 1992). Fire has had limited effects to spotted owl critical habitat in this province: 1,216 acres or less than 0.5 percent of the provincial baseline have been removed and/or downgraded by fire.

3.4.2.5 Oregon Cascades East

The Oregon Cascades East Province provides the easterly extension of the spotted owl's range in Oregon and contains all or portions of 10 CHUs.

Between 1994 and August 16, 2007, 10,833 acres or 7.81 percent of its provincial baseline have been removed and/or downgraded (Table 1). The majority of these acres, approximately 6,878, are a result of several fires during 2002 and 2003. The impacts of these fires were concentrated in the central portion of this province where approximately 20 percent of the extant suitable habitat in OR-3 and OR-4 and over 36 percent of the suitable habitat in OR-7 were removed and/or downgraded. OR-3 and OR-4 were designated to maintain suitable habitat and support dispersal along the eastern slope of the Oregon Cascades (Tweten 1992). OR-7 provides a north-south link within the province and an inter-provincial link with the Oregon Cascades West Province. Consulted-on effects have occurred in 8 of the 10 CHUs in this province. While most of the consulted-on effects have resulted in less than a 5 percent reduction (through removal or downgrading) of suitable habitat within any individual CHU, approximately 11 percent of the suitable habitat in OR-02 has been consulted-on for removal or downgrading. CHU OR-02 is located along the northern edge of the Warm Springs Indian Reservation and was established to maintain the continuum of owl habitat and north-south intra-provincial and east-west inter-provincial linkages in and around the reservation (Tweten 1992).

3.4.2.6 California Klamath

The California Klamath Province contains all or portions of 36 CHUs and over 85 percent of spotted owl critical habitat in California.

Between 1994 and August 16, 2007, approximately 10,483 acres of critical habitat (2.95 percent of this province's baseline) have been removed and/or downgraded (Table 1) from 14 CHUs within this province. The majority of effects to these acres can be attributed to the Megram Fire. This fire removed and/or downgraded 9,390 acres (22 percent) of the suitable habitat within CA-30; this CHU is located in the west/central portion of this province and links the interior subprovinces with the coastal provinces and is expected to provide for up to 24 spotted owl pairs overtime (Spangle 1992). Two other small CHUs, CA-10 (9,637 acres) and CA-35 (12,470 acres), have had approximately 20 percent of their suitable habitat removed and/or downgraded from consulted-on actions. The primary function of these CHUs is to provide intra-provincial connectivity in the eastern and south-central portion of this province, respectively (Spangle 1992).

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Table 1. Change in northern spotted owl suitable critical habitat from 1994 to August 16, 2007, resulting from Federal management actions and natural events by physiographic province.

Physiographic Province	1994 FSEIS	Critical Habitat (acres) Removed/Downgraded, 1994- July 19, 2005				Percent 1994 FSEIS	Percent of Rangewide Habitat Effects
	Provincial	Management	Fire	Insect/Disease	Total	Provincial Critical Habitat Baseline Affected	
	Critical Habitat Baseline						
WA:							
Olympic Peninsula	197,009	66	0	0	66	0.03	0.07
East Cascades	326,592	5,703 ¹	3,856 ^{1,2}	532	10,091	3.09	11.04
West Cascades	514,578	4,870	0	0	4,870	0.95	5.33
Western Lowlands	0	0	0	0	0	0.00	0.00
OR:							
Coast Range	348,717	2,714	0	0	2,714	0.78	2.97
Klamath Mountains	312,560	11,224	17,453	0	28,677	9.17	31.38
Cascades East	138,684	3,955	6,878 ²	0	10,833	7.81	11.85
Cascades West	894,843	21,964	1,216	0	23,180	2.59	25.36
Willamette Valley	0	0	0	0	0	0.00	0.00
CA:							
Coast Range	2,616	0	0	0	0	0.00	0.00
Cascades	50,687	472	0	0	472	0.93	0.52
Klamath	355,701	808	9,675	0	10,483	2.95	11.47
Total	3,141,987	51,776	39,078	532	91,386	2.91	100.00

¹ Habitat effects from the 1994 Tye fire appear as consulted-on effects in the NSO Consultation Effects Tracking Database. Thus, acres in the management column include some acres removed/downgraded by fire and the acres in the fire column represent only acres removed/downgraded by other fires.

² Includes 2003 fires.

4 Environmental Baseline for the Trinity PUD Direct Interconnect Project

The environmental baseline is an account of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and ecosystem within the action area (USDI Fish and Wildlife Service and USDC National Marine Fisheries Service 1998). The environmental baseline represents a “snapshot” in time of the current condition, and provides the context for the analysis of potential effects of the proposed action on the species.

4.1 Conservation Needs of Northern Spotted Owl Critical Habitat in the Action Area

The Trinity PUD Direct Interconnect Project area includes three land ownerships (STNF, BLM, and private lands). Within the STNF, the project area covers land allocations that include matrix lands, Late-Successional Reserve (LSR) RC334 and northern spotted owl critical habitat unit (CHU) CA-33. The proposed project will affect 35.40 acres (0.18 percent) within the 19,573 acres² of Federal land [STNF (35.15 acres) and BLM (0.25 acres)] that constitute CHU CA-33. However, 13.81 acres of the 35.40 acres that will be affected within CHU CA-33 is not capable of becoming northern spotted owl habitat. In this case the habitat is naturally-occurring non-habitat (i.e., areas that have never been nor will likely ever be owl habitat, such as lava flows, alpine areas, and poor timber sites) or habitat that has been previously altered (roads, power lines and ROWs, etc.) prior to critical habitat designation. Therefore, only 21.59 acres or 0.11 percent of CHU CA-33 will be removed and no longer function as northern spotted owl habitat. For a more detailed description of acres removed, ownership, CH and land use allocation see Appendix B.

With the area around Trinity Lake (i.e., Claire Engle Reservoir) highly fragmented due to past heavy logging, CHU CA-33 was designated to provide future nesting habitat (i.e., maintain existing suitable habitat and allow non-habitat to develop into suitable habitat where feasible) and, in concert with CHU CA-32, to extend protected habitat eastward towards the Cascades Province. CHU CA-33 was designated with the expectation that over time it would provide for five pairs of nesting owls. The Clear Creek LSR (RC334) overlays CHU CA-33 and its primary purpose with respect to the conservation needs of the northern spotted owl is to provide for population clusters of spotted owls (USDA Forest Service and USDI Bureau of Land Management 1994a).

4.2 Current condition – Habitat and Population Trends in the Action Area

4.2.1 Habitat Trends

For the purposes of this BO, the following habitat definitions apply (see Appendix C): high quality nesting/roosting (N/R) habitat includes those stands that are classified as 4G and 4N; moderate quality N/R refers to 3G stands; foraging (F) habitat refers to 3N stands; connectivity (dispersal only) habitat refers to 4P, 4S, 3P, 3S, 2G and 2N; and capable (potential future NRF) refers to all remaining Federal Forest Land that is capable of growing to NRF habitat conditions in the future.

² Federal acres based on “Environmental Baseline Update for the Northern Spotted Owl on the Shasta-Trinity National Forest, California” (FWS 2002).

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As stated above in Section 4.1, CHU CA-33 was designated to provide future nesting habitat and, in concert with CA-32, to extend protected habitat from the Klamath Province eastward towards the Cascades Province. Historically, there were ten activity centers within CHU CA-33. The portion of CA-33 that falls within the action area has five historic activity centers. Protocol surveys conducted in 2006 and 2007 determined that two of those five historic activity centers are occupied.

The Clear Creek LSR (RC334) overlays CHU CA-33 and an unpublished report by the Service in 2000 (USDI Fish and Wildlife Service 2000) determined that the Clear Creek LSR currently harbors "less than desirable habitat conditions," as it was found not likely to support 20 pairs of owls due to current habitat conditions. A recommendation was made that areas adjacent to this LSR may be important for maintaining owl populations (i.e., suitable owl habitat that may occur in adjacent Federal matrix lands) until which time habitat within the LSR grows into suitable nesting and roosting habitat.

Private lands surrounding CHU CA-33 and along the proposed transmission line are intensively managed for timber. While a large portion of these private lands are currently unsuitable for northern spotted owl nesting and roosting, they do provide foraging, dispersal and connectivity habitat between areas of suitable habitat on Federal forest lands.

4.2.2 Spotted Owl Numbers, Distribution, and Reproduction Trends

Multiple observations or sightings of northern spotted owls have occurred in the action area according to historical records. Historical activity centers that fall within the analysis area include TR0039, TR0072, TR0079, TR0151, TR0152, TR0153, TR0370, TR0377, TR0394 and TR0395. Current protocol surveys conducted in 2006 and 2007 have revealed that three owl pairs bred in those years; TR0151 (Papoose Creek Pair), TR0153 (Eastman Gulch Pair) and TR0395 (Brown's Mountain Pair) in 2006 and TR0153 (Eastman Gulch Pair) in 2007. The Papoose Creek Pair is located on Forest lands, the Eastman Gulch Pair was located on Forest land in 2006 and then on BLM land in 2007 and the Brown's Mountain Pair is located on private land.

4.3 Factors affecting the Species Environment/Critical Habitat in the Action Area

This section of the biological opinion describes the factors affecting the environment of the species and/or critical habitat in the action area. These include all Federal, state, tribal, local, and private actions already affecting the species and/or critical habitat or that will occur contemporaneously with the proposed action.

4.3.1 Consulted-Upon Effects

Implementation of Forest Service projects in CHU CA-33 have focused primarily on hazard tree removal activities, thinning and fuel reduction projects. The following table (Table 2) lists all consulted-upon activities over the past 12 years (1995-2007) within CHU CA-33.

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Table 2. Consulted-Upon Activities in Critical Habitat Unit CA-33 (1995-2007), Trinity Management Unit, Shasta-Trinity National Forest.

2001	1-12-2001-I-15	Red Flat Thinning/Fuels Project	Thin 88 acres of young and mid-successional plantations.
1999	1-12-1999-I-21	State Highway 3 Hazard Tree Project	Remove hazard trees on 102 acres of CA-33 and CA-32.
1998	1-12-1998-I-5	Weaverville Brush Burn	Burn/underburn 352 acres in brush fields or non-suitable habitat.
1997	1-12-1997-I-4	Boulevard II Hazard Tree Sale	Unknown number of acres.

4.3.2 Natural Disturbances

An analysis of fire history in the area based on the California Legacy Project Fire History Dataset (CDF and USDA 2003) reveals that only one fire has occurred since 1924 where CHU CA-33 is mapped. That fire (unnamed) burned 1937 acres and is located east of Trinity Dam and just south of the Papoose Creek Arm of Trinity Lake. Other fires outside of CHU CA-33 but still within the project area include the Hayfork Highway #2 fire (8/25/1964, 18,712 acres), the Browns Fire (7/12/1994, 1,768 acres) and the Lowden Fire (7/2/1999, 1,945 acres).

4.3.3 Summary

The Service concludes that consulted-upon effects or natural disturbances have had a minor impact to CHU CA-33 since its designation in 1992. The majority of consulted on projects over the last 12 years have focused on removing individual hazard trees along roads and brush burning in non-northern spotted owl habitat. These projects have had minimal effects on northern spotted owl critical habitat. The Red Flat Thinning/Fuels Project has likely benefited northern spotted owl critical habitat by reducing stand density and promoting larger trees into the future. With very minimal disturbance to CHU CA-33 over the last 15 years and continued forest growth, the Service believes that CHU CA-33 continues to function in the manner for which it was designated (to maintain current suitable habitat, while promoting the growth of non-suitable habitat for future use by owls).

5 Effects of the Trinity PUD Direct Interconnect Project

This section presents an analysis of the direct and indirect effects of the proposed action, including interrelated and interdependent actions, on northern spotted owl critical habitat. Implementation of the project as proposed will involve the replacement of an existing electrical transmission line (5.3 miles) which will incorporate widening the current ROW from 20 feet to 80 feet, the construction of a new electrical transmission line (9.7 miles) and 80 foot ROW, helipad staging areas, construction headquarters, construction staging areas, switchyard, and guy wire buffers and pulling stations outside of the ROW, access road construction on approximately 1.5 miles (comprised of several short spur roads) and improvements to 5.4 miles of the existing road network. All ROWs will be cleared of trees and maintained as low-growing trees, shrubs and ground vegetation. Additional trees outside of the ROW will be removed if they pose a safety hazard (i.e., danger of falling into the transmission line or structures). The degree to

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which these activities affect northern spotted owl critical habitat is presented with respect to destruction or adverse modification of critical habitat. Additionally, these effects are then discussed with respect to the conservation needs of the northern spotted owl within the action area and within the larger conservation strategy established for the owl by the NFWP: 1) protection of large blocks of habitat to provide for clusters of breeding pairs of northern spotted owls; 2) distribution of protected areas across a variety of ecological conditions; and, 3) provision of suitable connectivity habitat within the intervening matrix to support survival and movement across the landscape between reserves.

Critical habitat units contain the following types of habitat: (1) suitable habitat, which supports the physical and biological features necessary for northern spotted owl nesting, roosting, and foraging; (2) dispersal habitat, which supports the physical and biological features necessary for northern spotted owl dispersal; (3) capable habitat, which is currently not suitable but could develop into suitable or dispersal habitat; and, (4) non-owl habitat, where the physical properties of a site make it incapable of ever becoming owl habitat. Suitable and dispersal habitat can be removed, downgraded, or degraded as described in section 5.1.1.2. Capable habitat can be retarded or precluded from developing the primary constituent elements of critical habitat.

5.1 Habitat Modification

Forest management activities can modify suitable northern spotted owl habitat to varying degrees, leading to direct and indirect effects on spotted owls or their habitat at both site-specific and more landscape-level scales as discussed below.

5.1.1 Scientific Basis for Effects

5.1.1.1 Site-Specific Effects

Forest management activities, whether intended to address silvicultural needs or to facilitate other actions (e.g., mining, recreation, etc.) have the potential to reduce availability of northern spotted owl nest and roost sites. Northern spotted owls do not construct their own nests, but depend upon existing structures such as cavities and broken tree tops, characteristics associated with stands in later seral stages of development. Silvicultural prescriptions (e.g., green tree retention (GTR) prescriptions) or management activities that specifically target the oldest, most decadent trees in the stand for economic purposes, or require removal of hazard trees and snags to address human safety concerns, are likely to result in loss of nesting opportunities for spotted owls by removing the trees that contain those structures (Blakesley et al. 1992). Further, treatments designed to reduce or remove ladder fuels or release co-dominant individuals can simplify vertical structure in the forest understory, where spotted owls perch for hunting or roosting (Forsman et al. 1984).

Activities such as intermediate timber harvest, fuels reduction, thinning, or hazardous tree removal can contribute to changes in structure, diversity, and habitat microclimate by reducing overall canopy closure within a stand. Northern spotted owls prefer to nest and roost in older forests (55 *Federal Register* 26114, Blakesley et al. 1992) presumably because they provide protection under most weather conditions (Forsman et al. 1984, North et al. 2000). During

periods of rain, snow, or cold, Forsman et al. (1984) found northern spotted owls roosting significantly higher in the forest overstory than during hot weather, when northern spotted owls were commonly found roosting low in the forest understory. Weathers et al. 2001 documents physiological limitations that corroborate results of laboratory work and field studies which determined low heat tolerance of spotted owls compared to typical birds.

Various forestry activities that remove large trees, snags, and downed wood can affect prey composition and/or availability by altering characteristics of the habitat upon which prey species depend. Because the amount of standing dead (i.e., snags) and down material present on the forest floor is positively correlated with densities of some northern spotted owl prey species, removing these materials or temporarily disturbing material on the forest floor may contribute to declines in northern spotted owl prey, at least on a localized, short-term basis (Williams et al. 1992, Bevis et al. 1997). It may also be possible for prey species to be adversely affected by incidental loss of hardwoods, hazard trees, or snags during harvest. Because availability of large prey species, particularly dusky-footed woodrat and northern flying squirrels, has been shown to be important for northern spotted owl reproductive success (Barrows 1985, Zabel et al. 1995), activities that reduce prey populations could lower spotted owl recruitment and individual fitness.

5.1.1.2 Landscape-Scale Effects

Any individual or suite of site-specific effects discussed above could change the habitat function that a forested stand provides for owls. For the purpose of the following discussion, the degree of change to habitat function has been categorized using the following terms: removal, downgrade, and degrade. The term *removal* represents a complete loss of habitat function following an effect (i.e., an area that functioned as N/R, F, or dispersal habitat for northern spotted owls before the effect, no longer provides any habitat function for spotted owls after the effect). *Downgrade*, a subset of the term *removal*, refers to a reduction in the function of habitat (i.e., an area that functioned as N/R habitat before an effect, provides only F or dispersal habitat following the effect). This term could be used also to signify a change in function from foraging to dispersal as well. *Degrade*, to be distinguished from *downgrade*, indicates a reduction in habitat quality, but not habitat function following the effect (i.e., an area that functioned as F habitat prior to the effect, still provides such function after the effect, but perhaps is more limited due to a temporary reduction in prey base).

Landscape-level changes in habitat availability, distribution, and configuration have implications to individual northern spotted owl survival and productivity, as well as to northern spotted owl population dynamics. For example, removal or downgrading of habitat within home ranges, and especially close to the nest site, can be expected to have negative effects on northern spotted owls. Bart (1995) reported a linear reduction in northern spotted owl productivity and survivorship as the amount of suitable habitat within a spotted owl home range declined. In northwestern California, Franklin et al. (2000) found that survivorship of adult owls was greater where greater amounts of older forest were present around the activity center, but also found increased reproductive success where the amount of edge between older and younger forest was relatively high. Based on analysis of radio-telemetry data, Bingham and Noon (1997) reported that a sample of spotted owls in northern California focused their activities in heavily-used "core

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areas" that ranged in size from about 167 to 454 acres, with a mean of about 409 acres. These core areas, which included 60 to 70 percent of the owl telemetry locations during the breeding season, typically comprised only 20 percent of the area of the wider home range. These studies suggest that habitat removal within core areas could have disproportionately important effects on northern spotted owls. Other research has demonstrated that spotted owl abundance and productivity significantly decrease when the proportion of suitable habitat within 0.7 miles of an activity center falls below 500 acres (50 percent of the total 1,000 acres within 0.7 miles) (O'Halloran 1989, Simon-Jackson 1989, Thomas et al. 1990).

Timber harvest that produces relatively open stands (less than 40 percent canopy closure) or patch clear-cuts can fragment forest stands, creating more forest edge, and reducing the area of interior old forest habitat (Lehmkuhl and Ruggiero 1991). Habitat fragmentation has the potential to isolate individual northern spotted owls or populations of owls by increasing distances between suitable habitat patches and reducing habitat connectivity. Such isolation decreases the likelihood of successful dispersal of juvenile owls (Miller 1989), which in turn could reduce opportunities for genetic exchange between owl populations (Barrowclough and Coats 1985).

Currently there is little empirical data confirming that habitat fragmentation contributes to increased levels of predation on northern spotted owls. However, great horned owls (*Bubo virginianus*), an effective predator on spotted owls, are known to be closely associated with fragmented forest habitats (Johnson 1992). As mature forests are harvested, it is possible that great horned owls could colonize the fragmented forest and possibly increase northern spotted owl vulnerability to predation events.

Currently, it is unclear whether habitat fragmentation favors barred owl (*Strix varia*) occupancy over spotted owls. Barred owls were initially thought to be more closely associated with early successional forests than spotted owls, based on studies conducted on the west slope of the Cascades in Washington (Hamer 1988, Iverson 1993). However, recent studies conducted in the Pacific Northwest show that barred owls frequently use mature and old-growth forests (Pearson and Livezey 2003, Gremel 2005, Schmidt 2006). In the fire prone forests of eastern Washington, a telemetry study conducted on barred owls showed that barred owl home ranges were located on lower slopes or valley bottoms, in closed canopy, mature, Douglas-fir forest, while spotted owl sites were located on mid-elevation areas with southern or western exposure, characterized by closed canopy, mature, ponderosa pine or Douglas-fir forest (Singleton et al. 2005).

5.1.2 Habitat Modification Related Effects of the Trinity PUD Direct Interconnect Project

Direct Effects

Proposed actions for the Trinity PUD Direct Interconnect Project would remove approximately 9.18 acres of nesting and roosting habitat, 0.78 acres of foraging habitat, 10.34 acres of dispersal habitat, and 1.28 acres of capable/potential habitat due to tree removal for the transmission line ROW, access roads, anchors, and staging areas in CHU CA-33. The removal of 21.59 acres of critical habitat represents approximately 0.11 percent of the 19,573 total acres available in CHU CA-33.

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Overall long-term effects to northern spotted owl critical habitat would occur through complete removal of 21.58 acres of northern spotted owl nesting and roosting habitat, foraging habitat, dispersal habitat and capable/potential habitat for the construction of 80 foot ROWs, anchors and staging areas, and access road construction. These areas will remain non-habitat for the life of the transmission line. Additionally, hazard trees outside of the ROW that pose a threat to the transmission line will be removed. The removal of these hazard trees will degrade the quality of suitable habitat along the ROW over the long term because the safety guidelines target snags and the largest trees, including remnant old growth.

In addition to the direct loss of suitable habitat, the ROW clearing will increase the width of the existing 5.3 mile long power line corridor (mostly on Federal Lands) from 20 feet wide to 80 feet wide and create a new 80 foot wide corridor approximately 10 miles long (mostly on private lands). With clearcuts, owls can and do circumvent them, however, there is no way around this permanent opening and spotted owls must cross it to reach the other side. Red-tailed hawks (*Buteo jamaicensis*) and great-horned owls utilize power line corridors and other forest openings and are known to prey on spotted owls. Because predators are attracted to openings, the risk of predation to spotted owls that cross open areas is higher than when they move through forested areas.

Indirect Effects

Enlarging and clearing of the ROW will affect interior forest and edge habitats. Removing the wind firm mature trees along the clearing (i.e., hazard trees) will expose trees that have grown in the protected environment of the stand. It is highly probable that the trees along the new edge will experience damage from wind throw and a certain degree of stand unraveling likely to occur along the ROW during the first few windstorms.

Clearing, and the associated increased edge effect, often causes measurable effects on interior forest habitat and the remaining stands. For instance, changes in microclimate, such as temperature, wind speed, and species composition, can be measured over 400 feet into forests that are adjacent to openings (Chen 1990). Spotted owls exhibit a certain degree of temperature-sensitivity and are frequently observed roosting close to the ground in cool draws on hot days and conversely using roosts higher in the canopy and on southern aspects on cold days (Forsman et al. 1984, Thomas et al. 1990). Research also indicates that the level of fragmentation and heterogeneity increases with distance from owl nest sites and is disproportionately lower around nest and roost sites than at random sites, indicating a preference for interior forest conditions and avoidance of edge habitats for nesting and roosting (Hunter and Gutierrez 1995).

Beneficial Effects

To compensate for the removal of northern spotted owl critical habitat, Western will fund habitat improvements (i.e., plantation thinning, fuels reduction) at a ratio of three acres improved for each acre removed in areas capable of becoming spotted owl nesting and roosting habitat, five acres improved for every acre removed in critical habitat and seven acres improved for each acre removed in existing nesting and roosting habitat. Based on these ratios, on-the-ground improvements would treat approximately 261 acres at an average cost of \$2,744 per acre

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removed for an estimated total cost of \$716,616.75. See Appendix A for further clarification on how this mitigation estimate was derived.

Summary of Effects

A significant amount (nearly 100 percent) of nesting/roosting, foraging, dispersal and capable/potential habitat would remain intact within the critical habitat boundary CA-33. The effects of the proposed action do constitute an adverse effect to the critical habitat at the stand level because the function of the primary constituent elements (i.e., nesting/roosting, foraging, dispersal habitat) will be adversely affected. However, the proposed action does not constitute adverse destruction or modification at the critical habitat unit scale (CHU CA-33) or provincial scale, since the proposed action does not adversely affect a significant portion of CHU CA-33 (approximately 0.11 percent). The proposed action will remove approximately 22 acres of northern spotted owl habitat/capable habitat by expanding an existing ROW. The removal will occur in linear patches along the existing ROW rather than cutting a new ROW through intact interior habitat. The Service does not expect that this adverse impact at the stand level will impede the ability of CHU CA-33 to provide for the intended conservation needs (i.e., provide for five nesting pairs of northern spotted owl and connectivity eastward) of the northern spotted owl for which the CHU was intended.

6 Cumulative Effects of the Trinity PUD Direct Interconnect Project

Cumulative effects are those impacts of future State and private actions that are reasonably certain to occur within the area of the action subject to consultation. Future Federal actions will be subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

Private lands surrounding CHU CA-33 and along the proposed transmission line are intensively managed for timber. One current Timber Harvest Plan (THP)(2-06-142-TRI) recently went through public comment. This project is located in Sierra Pacific lands just south of the proposed project. While a large portion of these private lands are currently unsuitable for northern spotted owl nesting and roosting, they do provide foraging, dispersal and connectivity habitat between areas of suitable habitat on Federal forest lands. With current THPs, private lands are likely to remain conducive for northern spotted owl foraging, dispersal and connectivity at a landscape level. There are currently no future Federal or state actions planned within the action area. However, any future actions would be evaluated at a later date should they be proposed. Consequently, cumulative effects of the Proposed Action on northern spotted owl critical habitat are anticipated to be discountable, since northern spotted owls will be able to move across private lands into Forest Reserves (i.e., LSRs and CHUs) and no cumulative actions are expected to occur which will reduce the functionality of CHU CA-33.

7 Conclusion

The Service has reviewed the current, rangewide status of designated critical habitat for the northern spotted owl, the environmental baseline, the effects of the Trinity PUD Direct Interconnect Project, and the cumulative effects. Based on this review, it is the Service's

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biological opinion that these actions are not likely to “destroy or adversely modify” designated critical habitat for the northern spotted owl. The Service has reached this conclusion based on following factors:

1. The change in the rangewide status of critical habitat due to consulted-upon effects is minor. Only approximately 1.65 percent of the amount of existing critical habitat has been consulted-on for removal or downgrading, with the majority of these effects, 31,188 acres or 0.99 percent being concentrated in the Oregon Cascades West and Oregon Klamath Mountains Provinces.
2. The change in the provincial (Klamath Physiographic Province) status of critical habitat due to consulted-upon effects is also minor. Less than 0.5 percent of the amount of existing critical habitat has been consulted-on for removal or downgrading. CHUs in this province continue to function as designated.
3. Natural events (e.g., wildland fire, insect, and disease disturbances) have impacted individual CHUs, but rangewide, the critical habitat network continues to function as designated within and among provinces. The Klamath Physiographic Province has only had 2.7 percent of its critical habitat impacted by fire. CHU CA-33 has not had any fires since northern spotted owl critical habitat was designated.
4. Overall, the effects of ROW construction, anchor and staging construction and road construction for the proposed action are limited to the removal of 21.58 acres of northern spotted owl habitat within CHU CA-33. Although adverse, these effects to critical habitat will not prevent CHU CA-33 to continue to function in maintaining these habitat conditions for the area.
5. Habitat improvements on approximately 261 acres within CHU CA-33 will be funded by Western to compensate for the loss of northern spotted owl habitat due to project implementation.

The critical habitat network is expected to function as designated at all scales of analysis. CHU CA-33 is anticipated to continue to function in the manner for which it was designated. Therefore, when considering the status of the rangewide and provincial CHU networks, the effects of the action, and the cumulative effects, the Trinity PUD Direct Interconnect Project will not result in “destruction or adverse modification” of designated critical habitat for the northern spotted owl.

INCIDENTAL TAKE STATEMENT

1 Introduction

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the taking of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined (50 CFR 17.3) by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service (50 CFR 17.3) as actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

2 Amount or Extent of Take

The Service does not issue incidental take for adverse effects to designated critical habitat. The implementing regulations regarding incidental take (50 CFR. 402.14) apply to individuals of a listed species, not designated critical habitat. Therefore, the Trinity PUD Direct Interconnect Project will not result in any incidental take.

3 Effect of the Take

The Service does not issue incidental take for adverse effects to designated critical habitat.

4 Reasonable and Prudent Measures

Pursuant to 50 CFR 402.14 (I) (ii), reasonable and prudent measures are those the Service considers necessary to minimize the impact of the incidental taking. Since no incidental take is authorized, no reasonable and prudent measures are necessary.

5 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of ESA, the Forest Service must comply with terms and conditions which implement any reasonable and prudent measures. However, no terms and conditions are necessary because no incidental take is authorized.

6 Monitoring Requirements

In order to monitor the impacts of incidental take, the Federal agency or any applicant **MUST** report the progress of the action and its impacts on the species to the Service as specified in the

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incidental take statement. However, reporting requirements are not necessary because no incidental take is authorized.

CONSERVATION RECOMMENDATIONS

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species and the ecosystems upon which they depend. Regulations in 50 CFR S.402.02 define conservation recommendations as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or regarding development of information.

The Service offers to the STNF the following conservation recommendations:

- 1) Design future forest management activities to reduce incidental take of spotted owls and impacts to other listed species and their habitat through continued interagency cooperation and planning with the Service.
- 2) Monitor the habitat utilization and occupancy rates of barred owls in the area to aid in assessing the threat of competition on northern spotted owl survival and recovery.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects, or benefiting listed species or their habitats, the Service requests notification of the implementation of these conservation recommendations.

RE-INITIATION - CLOSING STATEMENT

This concludes formal consultation on this action. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required when discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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APPENDIX A - Mitigation Scenario Table

Habitat Type	Mitigation Ratio	Total Federal Acres	FS Acres	BLM Acres	Mitigation Acres	Mitigation Costs ³	Total FS Cost	Total BLM Cost
Nesting and Roosting	7 acres improved to 1 acre removed	11.31	9.58	1.73	79.19	\$2,744	\$184,068.89	\$33,224.32
Critical Habitat*	5 acres improved to 1 acre removed	26.21	26.21	0.00	131.07	\$2,744	\$359,660.37	\$0.00
Capable**	3 acres improved to 1 acre removed	16.97	16.97	0.00	50.90	\$2,744	\$139,663.17	\$0.00
			Total Federal Acres		261.16	Subtotal	\$683,392.43	\$33,224.32
			Forest Service Acres		249.05			
			BLM Acres		12.11	Grand Total (FS and BLM)	\$716,616.75	

*Note: Critical Habitat acres that are also nesting and roosting are excluded from these figures. They have been counted once already in the nesting and roosting category.

** Note: Mitigation in this category was meant to include all lands capable for growing into nesting and roosting. Foraging and connectivity habitat types are included for that reason.

³ Mitigation costs have been estimated using the following assumptions. The project will have 20 percent flat ground easily accessed and treated using mastication (minimum \$350/acre), 60 percent sloped below 30 percent but still capable of using a masticator for treatment (minimum \$500/acre) and 20 percent difficult ground sloped greater than 30 percent that will require hand lop and scatter (Minimum \$1050/acre). Planning costs are estimated to be approximately \$15,000.

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APPENDIX B. Table of Affected Acres by Land Ownership, CH and LUA⁴.

FS Ownership	CH	LSR	Outside CH (Matrix)	Outside LSR (Matrix)
High Quality Nesting and Roosting (Old-growth)	5.89	5.45	0.00	0.44
Moderate Quality Nesting and Roosting	3.04	3.04	0.65	0.65
Foraging	0.78	0.78	0.44	0.44
Connectivity	10.34	9.84	4.13	4.63
Capable	1.28	1.28	0.00	0.00
Not Capable	13.81	13.81	15.75	15.75
Totals	35.15	34.21	20.96	21.90

BLM Ownership	CH	LSR	Outside CH (Matrix)	Outside LSR (Matrix)
High Quality Nesting and Roosting (Old-growth)	0.00	0.00	0.00	0.00
Moderate Quality Nesting and Roosting	0.25	1.73	1.48	0.00
Foraging	0.00	0.00	0.00	0.00
Connectivity	0.00	0.00	0.00	0.00
Capable	0.00	0.00	0.00	0.00
Not Capable	0.00	0.00	2.33	2.33
Totals	0.25	1.73	3.81	2.33

Private Ownership	No Designation
Nesting and Roosting Habitat	20.2
Foraging	40.0
Capable	Undetermined
Not Capable	Undetermined
Totals	60.2

⁴ Federal data was submitted by the Forest Service as an amended table to the Biological Assessment (10/4/2007). Private land data was provided by the Western Area Power Administration (8/28/2007).

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APPENDIX C. Shasta-Trinity Timber and Successional Strata Definitions⁵.

Timber strata definitions used in reference to northern spotted owl habitat determinations. DBH refers to 'diameter at breast height'.

Size Class Definitions		Density class Definitions	
1	1 to 5.9 inches dbh.	S	10 to 19% canopy closure
2	6 to 12.9 inches dbh	P	20 to 39% canopy closure
3	13 to 24.9 inches dbh	N	40 to 69% canopy closure
4	25 to 40.0 inches dbh	G	> or equal to 70% canopy closure
5	> 40 inches dbh	6	two-storied stands

Table 2. Successional stage stratification based upon forest timber type.

Type	Description
Late-successional/Dense	4N, 4G, 5N, 5G: primarily commercial conifer forest. Includes 4P and 5P stands if they contain conifers as a primary component and conifers or black oak as a secondary component.
Late-successional/open	4S, 4P (except as noted above), 5S, 5P (except as noted above): primarily commercial conifer forest.
Mid-successional/dense	3N, 3G, 6 stands: primarily commercial conifer forest. Includes 3P stands if they contain conifers as a primary component and conifers or black oak as a secondary component.
Mid-successional/open	3S, 3P (excepted as noted above): primarily commercial conifer forest.
Early-successional/poles and saplings	2N, 2G and plantations older than 20 yrs: primarily commercial conifer forest. Includes 2S and 2P stands if they contain conifers as a primary and secondary component.
Early-successional/seedlings	1N, 1G and plantations younger than 20 yrs: primarily commercial conifer forest. Includes 1S and 1P stands if they contain conifers as a primary and secondary component.
Other	Includes hardwood stands, non-commercial conifer stands, early-successional S and P stands with conifers as a primary component and hardwoods as a secondary component with shrubs and grasses.

⁵ Source: Forest-wide LSR Assessment, Shasta-Trinity National Forest, 1999.

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**NATIONAL HISTORIC PRESERVATION ACT
SECTION 106
CALIFORNIA STATE HISTORIC PRESERVATION OFFICE**

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**PROGRAMMATIC AGREEMENT
AMONG
THE WESTERN AREA POWER ADMINISTRATION, THE UNITED STATES
FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST, THE UNITED STATES
BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE, THE UNITED
STATES BUREAU OF RECLAMATION, MID-PACIFIC REGION, THE UNITED
STATES ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT, AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
TRINITY PUBLIC UTILITIES DISTRICT DIRECT INTERCONNECTION PROJECT**

WHEREAS, Western Area Power Administration (Western) in cooperation with the Trinity Public Utilities District (TPUD), proposes to construct approximately 16 miles of a new 60-kilovolt (kV) single circuit overhead transmission line (T-line) in Trinity County from Western's Trinity Substation below Trinity Dam to a proposed new switchyard near the town of Weaverville (Undertaking); and

WHEREAS, the Trinity PUD receives 100 percent of its electrical transmission power from Western, and as such, Western proposes to construct the Trinity Public Utilities District Direct Interconnection Project (Project) to enhance the reliability of service for the customers of Trinity PUD by establishing a new direct interconnection with Western's Central Valley Project (CVP) transmission system; and

WHEREAS, until the creation of the Department of Energy in 1977, the Department of Interior was responsible for electrical power generated from Federal dams and Western is proposing this Undertaking under the authorization of the Trinity River Division Act of August 12, 1955 which states in part that "the Secretary of the Interior is authorized to construct, operate, and maintain, as an addition to and an integral part of the Central Valley [P]roject, California, the Trinity River [D]ivision...such electrical transmission facilities as may be required to deliver the output of power plants and to furnish energy in the Trinity County"; and

WHEREAS, the Undertaking involves public lands under the jurisdiction of the U. S. Forest Service, Shasta-Trinity Unit (USFS), the U.S. Bureau of Land Management, Redding Field Office (BLM), the U. S. Bureau of Reclamation, Mid-Pacific Region (Reclamation), and as such would issue rights-of-way (ROW) to Western for Project transmission lines and associated access roads; and

WHEREAS, the U.S. Army Corps of Engineers (USACE), San Francisco District, may issue permits for construction activities within the Area of Potential Effects for the proposed Project, and because of this potential has been invited to be a signatory of this Agreement; and

WHEREAS, the USFS, BLM, Reclamation, and USACE pursuant to 36 CFR § 800.2(a)(2), designate Western as the lead Federal agency for the purpose of compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470f), as amended, and its implementing regulations at 36 CFR Part 800; and

WHEREAS, Western finds that the construction, operation, and maintenance of the Project (Undertaking) may adversely affect historic properties; and

WHEREAS, Western has consulted with the California State Historic Preservation Officer (SHPO), pursuant to 36 CFR § 800.4(b)(2) and § 800.14(b)(ii), because effects of the Undertaking's implementation on historic properties cannot be fully determined prior to the Undertaking's approval, is yet in the process of defining the locations of certain APE components, and chooses to conclude its assessment of the Undertaking's potential adverse effect and resolve any such effect through the implementation of this Programmatic Agreement (PA); and

WHEREAS, Western has notified the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR § 800.6(a)(1)(i)(C), and intends to execute this PA pursuant to 36 CFR § 800.6(b)(1) because the ACHP has declined to participate in the consultation process pursuant to 36 CFR § 800.6(a)(1)(iii-iv); and

WHEREAS, pursuant to section 101(d)(6)(B) of the NHPA, 36 CFR 800.2(c)(2)(ii), the American Indian Religious Freedom Act (42 USC 1996; AIRFA), Executive Order 13175, and section 3(c) of the Native American Graves Protection and Repatriation Act (25 USC 3001-13; NAGPRA), Western has consulted with Redding Rancheria, the Nor-Rel-Muk Nation, the Wintu Tribe of Northern California, the Wintu Educational and Cultural Council, and the Hoopa Valley Indian Reservation (Tribes), and has invited those expressing an interest in the Undertaking to concur in this PA, and with the further understanding that, notwithstanding any decision by these groups to decline concurrence, Western shall continue to consult these groups throughout the implementation of this PA; and

WHEREAS, Trinity PUD would authorize upgrades to its current system to support the Project and has been invited to concur in this PA; and

NOW, THEREFORE, Western, USFS, BLM, Reclamation, USACE, and SHPO, agree that the Undertaking shall be implemented in accordance with the following Stipulations in order to take into account the effects of the Undertaking on historic properties.

STIPULATIONS

Western, in cooperation with the USFS, BLM, Reclamation, and USACE will ensure, irrespective of USFS, BLM, Reclamation, USACE ability to cooperate, that the following stipulations are carried out:

I. DEFINITIONS

The definitions provided at 36 CFR § 800.16 and in this stipulation are applicable throughout this PA.

“Cultural resources” means any archaeological materials and sites dating to the Prehistoric, Historic or Ethnohistoric periods that are currently located on, or are buried beneath the ground surface; standing structures that are over 45 years old; and cultural and natural places that have importance for Native Americans.

“Day,” singular or plural, refers to a calendar, rather than a business, day.

“Tribes” means the five Tribes that Western has consulted with and invites above to concur in this PA. The five Tribes are the Hoopa Valley Tribe, the Redding Rancheria, the Wintu Tribe of Northern California, Nor-Rel-Muk Nation, and the Wintu Educational and Cultural Council.

II. COMPONENTS OF THE PROJECT

The Project includes the following four components:

A. TRINITY SUBSTATION TO LEWISTON TAP COMPONENT

1. Upgrade an existing TPUD 12-kV distribution line to a 21-kV distribution line located south-west of the Trinity Dam Powerhouse and construct a new 21-kV distribution line involving the installation of about 10 wood poles and 1300 linear feet of new overhead conductor lines and fiber optic cable within a 40 foot wide ROW easement along the west side of Powerhouse Road connecting to Western’s Trinity Substation;
2. Construct a small 36-foot by 52-foot switching junction in the proposed 21-kV alignment near the Trinity Substation;
3. Removal of approximately 5.3 miles of existing Trinity PUD 12-kV distribution line from Reclamation’s Trinity Power Plant at Trinity Dam to a ridge top approximately 0.75 mile east of Lewiston Dam and expanding the existing Trinity PUD 12-kV, 20-foot ROW to an 80-foot ROW;
4. Installation of approximately 6.5 miles of new 60-kV transmission line between the Trinity Substation located below the Trinity Dam to a tap point approximately 0.75 mile west of Lewiston Dam and in some pole locations expanding the 80-foot ROW to accommodate the installation of guy wires, guy pockets and pulling/tensioning sites; Construction of wooden, single-pole 60-kV transmission line structures and 3-Pole turning structures with about 5 percent of those new poles to be steel and installation of an overhead fiber optic cable throughout the transmission line;

5. Removal of trees and vegetation from the ROWs for both the 21-kV distribution line and the 60-kV transmission line, and removal or trimming of trees outside of the ROWs that can grow into or fall into the conductor (danger trees);
6. Access road improvements and spur road construction, and improvements and other ancillary facilities (construction staging/laydown areas, helipads) associated with the reconstruction of this transmission line.

B. LEWISTON TAP TO LEWISTON SUBSTATION COMPONENT

1. Installation of approximately 1 mile of new 60-kV transmission line from the Lewiston Tap to the TPUD Lewiston Substation. Acquisition of a new 80 foot wide ROW for this installation and in some pole locations expanding the 80-foot ROW where necessary to accommodate the installation of guy wires, guy pockets and pulling/tensioning sites. Construction of wooden, single-pole 60-kV transmission line structures and installation of an overhead fiber optic cable on these poles;
2. Removal of trees and vegetation from the new ROW; and removal or trimming of trees outside of the ROW that can grow or fall into the conductor (danger trees);
3. Access road improvement, spur road construction, and improvements and other ancillary facilities (construction staging/laydown areas, helipads) associated with this construction of this transmission line.

C. LEWISTON TAP TO PROPOSED WEAVERVILLE SWITCHYARD COMPONENT

1. Installation of approximately 8.5 miles of new 60-kV transmission line from the Lewiston Tap to the proposed Weaverville Switchyard located approximately 2 miles south of the center of Weaverville on the east side of State Route (SR) 299 and acquire a new 80- foot wide ROW for this installation and in some pole locations expanding the 80-foot ROW to accommodate the installation of guy wires, guy pockets and pulling/tensioning sites. Construction of wooden, single-pole 60-kV transmission line structures and 3-pole turning structures with about 5 percent of those new poles to be steel and installation of an overhead fiber optic cable on these poles;
2. Removal of trees and vegetation from the new ROW; and removal or trimming of trees outside of the ROW that can grow or fall into the conductor (danger trees);
3. Access road improvement, spur road construction, and other ancillary facilities (construction staging/laydown areas, construction headquarters facilities helipads) associated with the construction of this transmission line.

D. WEAVERVILLE SWITCHYARD COMPONENT

1. Construction of a small switchyard two miles south of the center of Weaverville on

the east side of SR 299 encompassing an area approximately 90- by 110-feet on land owned by BLM;

2. Regrading a 100-foot long by 50 foot wide abandoned portion of the old Highway 20 to use as an access road from SR 299 to the proposed Weaverville Switchyard;
3. Construction of two short transmission line segments connecting the proposed Weaverville Switchyard to a Pacific Gas and Electric existing 60-kV transmission line.

III. STANDARDS

- A. PROFESSIONAL QUALIFICATIONS. All actions prescribed by this PA that involve the identification, evaluation, analysis, recordation, treatment, monitoring, and disposition of historic properties and that involve the reporting and documentation of such actions in the form of reports, forms or other records, shall be carried out by or under the direct supervision of a person or persons meeting, at a minimum, the *Secretary of the Interior's Professional Qualifications Standards* (PQS) for archaeology, history, or architectural history, as appropriate (48 FR. 44739). However, nothing in this stipulation may be interpreted to preclude any party qualified under the terms of this paragraph from using the services of properly supervised persons who do not meet the PQS.
- B. DOCUMENTATION STANDARDS. Reporting on and documenting the actions cited in paragraph A. of this stipulation shall conform to every reasonable extent with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 FR. 44716-44740), as well as the California Office of Historic Preservation's Preservation Planning Bulletin Number 4(a) December 1989, *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports*.
- C. CURATION AND CURATION STANDARDS. To the extent permitted under §§ 5097.98. and 5097.991. of the California Public Resources Code, the materials and records resulting from the actions cited in paragraph A. of this stipulation shall be curated in accordance with 36 CFR Part 79. Where Federal lands are involved, all records and materials resulting from the actions cited in paragraph A. of this stipulation shall be curated in accordance with 36 CFR Part 79 and the provisions of the NAGPRA, 43 CFR Part 10, as applicable. If cultural materials are recovered from private lands, Western will seek to have the materials donated through a written donation agreement to be curated with other cultural materials. Western will attempt to have all collections curated at one location. Western shall be responsible for securing a curation agreement with an appropriate curation facility and providing funding for the curation of collected materials. Signatories to the PA will have the opportunity to review Western's curation process to determine if one curation facility is feasible.

IV. AREA OF POTENTIAL EFFECTS

The Areas of Potential Effects (APE) for the Undertaking are defined as follows:

- A. **DIRECT APE DESCRIPTION.** For all transmission line components as described in Stipulations II., the APE will be a 100-foot wide corridor for transmission line pole installation. In some single pole locations an additional 10 to 35- foot footprint outside of either side of the transmission line ROW for guy wire and guy pocket installation will be included in the APE; similarly an additional 60-foot footprint outside either side of the transmission line ROW for 3-pole turning structures will be needed. Actual area of disturbance will vary considerably, depending on the angle needed for effective guying; in some cases the guys and anchors will remain within the 80-foot ROW. Transmission line components APE will also include 250 by 50 foot areas outside of the transmission line ROW where the proposed transmission line angles more than 15 degrees. These areas would be used for conductor pulling and tensioning. For all access roads that are located outside of the APE for the transmission line, the APE will be a 50-foot corridor centered on the road. For all project components including, but not limited to, construction staging/laydown areas, construction headquarters facilities, and helipads, the APE will be the footprint of each area as well as a 100-foot buffer in all directions from the perimeter of the footprint. For the proposed Weaverville Switchyard the APE will be a 500-foot by 500-foot area for the footprint of the switchyard and connecting distribution lines. For the 21-kV distribution line and switching junction, the APE will be the footprint of the switching junction, structures, and the ROW for the distribution lines.
- B. **INDIRECT APE DESCRIPTION.** For project components as describe in IV.A.1 above, the indirect APE will be a two mile radius from the center line of the existing Trinity PUD 12-kV distribution line from Reclamation's Trinity Power Plant at Trinity Dam to a ridge top approximately 0.75 mile east of Lewiston Dam and a three mile radius from the new transmission line ROW.
- C. **AMENDING THE APE.**
 - 1. The APE of stipulation IV.A above encompasses an area sufficient to accommodate all of the project (alternative) components under consideration as of the date of the execution of this PA. If Western determines in the future that unforeseen changes to the Undertaking may cause alterations in the character or use of historic properties, if any such properties exist, in a geographic area or areas beyond the extent of the original APE above, then Western shall increase the size of that APE using the process set forth in stipulation IV.C.2 below. Western may choose, conversely, to decrease the size of the subject APE to accommodate the engineering design locations of transmission line structures, access roads, switchyard, and other components of the Project using the process set forth in stipulation IV.C.2 below.

2. Any signatory to this PA may propose that the APE established hereunder be modified. Western shall notify the other signatories of the proposal and consult with the proposing signatory and the other signatories for no more than 14 calendar days to reach agreement on the proposal. If the signatories agree to the proposal, then Western will prepare a description and a map of the modification to which the signatories agree. Western will keep copies of the description and the map on file for its administrative record for the Undertaking, and distribute copies of each to the other signatories within 30 days of the day upon which agreement was reached. Upon agreement hereunder to a modification to the APE that adds a new area, Western shall follow the processes set forth in stipulations V–IX below to identify and evaluate historic properties in the new APE area, assess the effects of the Undertaking on any historic properties in the new area, and provide for the resolution of any adverse effects to such properties, known or subsequently discovered. If the signatories cannot agree to a proposal for the modification of the APE, then they will resolve the dispute in accordance with stipulation XIV below.

V. IDENTIFICATION OF HISTORIC PROPERTIES

Western in consultation with the SHPO, USFS, BLM, Reclamation, USACE, SPI, the Tribes, and the public, shall make a reasonable and good faith effort to identify historic properties in the Undertaking's APE.

- A. A Class I inventory (records check) will be conducted for the APE as defined in Stipulation IV A and B. The Class I inventory will include a records check at the appropriate CHRIS Information Center, review of BLM, Reclamation, and USFS site records, and the Jake Jackson Museum and History Center in Weaverville. Affected Tribes will be consulted on the potential for the existence of historic properties of religious and cultural significance and traditional cultural properties (TCP) within the Direct and Indirect APE. Western shall ensure that the Class I inventory identifies historic properties of religious and cultural significance, including TCPs, in both the direct and indirect APE as described in IV. A and B of this document. If additional areas have an additional Class I level investigation conducted, Western will notify the signatories and consulting and concurring parties. All information on the location of cultural resources shall be treated as confidential and not released to the public or other unauthorized entity, consistent with section 304 of the NHPA (16 U.S.C. 470w-3(a)-(c)) and section 9 of the Archaeological Resources Protection Act (16 U.S.C 470aa-mm), as amended.
- B. In order to locate historic properties of religious and cultural significance and and TCPS that may be affected by the Undertaking, Western shall ensure that an intensive pedestrian cultural resource survey (Class III Survey) is completed of

the Undertaking's Direct APE prior to the implementation of the Undertaking. The pedestrian survey interval shall not exceed 20 meters.

1. All prehistoric and historic sites identified during Class III inventories will be recorded on new or updated California Department of Parks and Recreation Form DPR 523 (Series 1/95), using the "Instructions for Recording Historical Resources" (Office of Historic Preservation, March 1995) or other appropriate agency forms and instructions as required by USFS, BLM, or Reclamation. Western's cultural resources contractor shall obtain permanent site numbers from the appropriate California Historical Resources Information System (CHRIS) Regional Information Center (RIC) and shall submit the final approved site forms to that CHRIS RIC. Permanent site numbers shall then be used in all final reports prepared pursuant to the requirements of this PA.
 2. Previously unknown historic properties of religious and cultural significance and TCPS identified during Class III inventories and/or through consultations with Tribes may be recorded on the DPR Form 523, unless a Tribe or an individual representing a Tribe objects. If such objection arises, the properties may be recorded on a form and in a manner that is in accordance with the recommendations of the Tribe or of the individual.
 3. Western will ensure that a Class III Cultural Resource Inventory and (Class III Report) is prepared to document the results of the actions described by paragraphs B.1-2 of this Stipulation and that the draft Class III Report is submitted concurrently by Western to the other signatories and consulting or concurring parties, except for the SHPO for a 30 calendar day review period, subject to the confidentiality requirements stipulated in this PA. Absent comments within this time frame, Western may assume the reviewing parties concurrence that the draft Class III Report is satisfactory. Western will provide the reviewing signatories and consulting and concurring parties with written documentation indicating whether and how the draft Class III Report will be modified in response to any timely comments received. Unless the reviewing signatories and consulting and concurring parties object to this documentation in writing to Western within 15 calendar days following receipt, Western may finalize the draft Class III Report as it deems appropriate. Western will then send this version to the SHPO for a 30 calendar day review period. Absent comments within this time frame, Western may assume the SHPO's concurrence that the draft Class III Report is satisfactory. The draft Class III Report will be modified based on SHPO comments and Western will provide the reviewing signatories, consulting and concurring parties, and the CHRIS RIC with copies of the final Class III Report, subject to the confidentiality requirements stipulated in this PA.
- C. Western shall consult with the signatories and other consulting and concurring parties to develop methods for identifying sites or areas of historic or cultural value to Native American and/or other ethnic groups, and to develop mechanisms to ensure that the views of these groups are considered in Project

planning, following the provisions of section 101(d)(6)(A) and (B) of the NHPA.

VI. DETERMINATIONS OF ELIGIBILITY

- A. Western will initially assume, for the purpose of the consultation that is the subject of this PA, the NRHP eligibility of any prehistoric or historic district, site, building, structure, or object (properties), historic properties of religious and cultural significance and TCPS, in the APE. The development of the engineering design for the Project will take these properties into account and strive to avoid the majority of them.
- B. Where the implementation of the Undertaking may affect an historic property, Western, in consultation with the Federal Agency having jurisdiction over the historic property, shall evaluate and develop a formal determination of eligibility, pursuant to 36 CFR § 800.4(c)(1), for each such property. Western shall submit said determinations to the other signatories to this PA and, upon request, to other consulting and concurring parties concurrently with and under the same review schedule for the draft Class III Report of stipulation V.B.3 above. Should a dispute arise over the subject determinations, Western shall provide the SHPO with a summary of the dispute in conjunction with Western's consultations with the SHPO below on the determinations. After the initial comment and response periods in stipulation V.B.3 above, Western will forward formal determinations of eligibility, and any of the above dispute summaries, to the SHPO as a part of the SHPO 30 day review period under stipulation V.B.3. Absent comments within this time frame, Western may assume the SHPO's concurrence that the recommendations for eligibility are satisfactory. If the SHPO provides comment, Western will discuss that comment with the SHPO and modify the determinations of eligibility accordingly or resolve any dispute that may arise in accordance with 36 CFR § 800.4(c)(2).
- C. Rather than only using existing Federal guidance (e.g. Bulletin 38), Western shall, in consultation with the signatories and other consulting and concurring parties, develop methods to evaluate sites or areas of historic or cultural value to Native American and/or other ethnic groups for eligibility for listing in the NRHP.
- D. Western shall evaluate properties identified subsequent to the conclusion of the inventory process in stipulation V.B.3 above but prior to the implementation of the Undertaking in accordance with 36 CFR § 800.4(c).

VII. EFFECTS ASSESSMENT

- A. Once Western has determined all APE components for the Project, the potential effects of constructing, operating, and maintaining transmission lines, access roads, switchyards, and other components of the Project will be better understood. At that time, Western shall assess, in consultation with the other signatories and

consulting and concurring parties and in accordance with 36 CFR § 800.5(a), the specific effects of the preliminary design on the historic properties, assumed or determined, in the Undertaking's APE. This will be done concurrently with the distribution of the Class III Inventory Report and the above determinations of eligibility (see stipulations V.B.3 and VI.C). These effects assessments will serve as the basis for the development of the HPTP (see stipulation VIII).

- B. Western shall assess, in consultation with the other signatories and in accordance with 36 CFR § 800.5(a), the specific effects of the preliminary or subsequent engineering designs for the Project on historic properties that are identified subsequent to the conclusion of the effects assessment process in stipulation VII.A above but prior to the implementation of the Undertaking. Western shall consult with the other signatories and consulting and concurring parties in each such instance, and incorporate and account for the results of each such consultation in the HPTP.

VIII. HISTORIC PROPERTIES TREATMENT PLAN

- A. Upon the completion of the effects assessments of stipulation VII above and prior to the onset of any activity related to the implementation of the Undertaking, with the exception of the activities listed in stipulation XII.A.1 below, Western shall develop, in consultation with the other signatories and consulting and concurring parties, an HPTP that will:
- 1) list the historic properties, assumed or determined, in the Undertaking's APE that the construction of the Project will unconditionally avoid,
 - 2) specify the conditions which Western will fulfill to ensure that the construction of the Project will not adversely affect historic properties in the Undertaking's APE that are near the Project's ultimate alignment,
 - 3) individually specify how Western will avoid, minimize, or mitigate any adverse effects that the agency finds that the construction of the Project may have on particular historic properties,
 - 4) provide for the disposition of all properties that are found subsequent to the preparation of the HPTP as a result of Western's efforts under stipulations IV.B, V, VI.D, and VII.B above and stipulation X below.

The HPTP will be implemented subsequent to the issuance of each of the Federal agencies' NEPA decisions and concurrent with the onset of any activity related to the implementation of the Undertaking. The HPTP shall be submitted for review and comment in accordance with stipulation VIII. D.

- B. The HPTP shall reflect the guidance provided in the *Council's Treatment of Archaeological Properties* (1980), the Secretary of the Interior's *Standards for the Treatment of Historic Properties* and will be focused on the determination of the Project effects. In addition to the standard minimum requirements outlined in the above documents, the HPTP shall include:
1. The methodology to be used to record any historic structures to sufficient architectural standards, in consultation with the National Park Service;
 2. The methodology to be used to further investigate and record information on any properties identified as traditional cultural properties;
 3. The proposed disposition of recovered materials and records which shall include a discussion of curation;
 4. The procedures for treatment and disposition of any human remains, funerary objects, sacred objects, and objects of cultural patrimony;
 5. A description of avoidance measures for historic properties, assumed and determined, located near the Project's ultimate alignment and other project components which will ensure that the construction of the Project results in no adverse effect to them. Avoidance measures for such properties may include, but not be limited to, temporary fencing, flagging, staking or using a monitor. This section of the HPTP will describe a monitoring report and related schedule for completion and distribution;
 6. The methods for testing and excavation describing techniques and sample design. There will be a discussion of analysis methodology for all artifact types, necessary dating of samples, macrobotanical analysis, pollen analysis and faunal analysis;
 7. A culture history section which addresses themes for the types of sites to receive treatment as well as appropriate research questions to apply to the excavations and testing. For historic standing structures, it will include how to address architectural history and landscape;
 8. A schedule for completing data recovery, including analysis, reporting and disposition of materials and records, as well as a schedule for completing the draft and final data recovery report(s);
 9. A description of using the guidance in the HPTP to develop a treatment plan for historic properties that would be adversely affected by a modification to the Project (see stipulation XII. B. 2).

10. A description of alternative treatments for adverse effect that are not data recovery.
 11. The *Plan for Discovery of Cultural Resources* for when any cultural resource is encountered by during the construction of the Project (see stipulation X).
- C. Western shall submit the HPTP to all signatories and consulting and concurring parties, except for the SHPO, for a 30 day review period. Absent comments within this time frame, Western may assume the reviewing signatories' concurrence. Western will provide the reviewing parties with written documentation indicating whether and how the draft HPTP will be modified in response to any timely comments received. Western will then send this version to the SHPO for a 30 day review period. Absent comments within this time frame, Western may assume the SHPO's concurrence that the draft HPTP is satisfactory. The draft HPTP will be modified based on SHPO comments, and Western will provide the reviewing signatories and consulting and concurring parties a copy of the final HPTP. Any disputes that may arise between Western and another signatory over the content of the HPTP shall be resolved in accordance with stipulation XIV below.

IX. REPORTING REQUIREMENTS

- A. Western shall submit each report relating to the PA, including the reports detailing the results of the identification efforts [Class III Report], HPTP, and the report for the results from the implementation of the HPTP [Treatment Plan] provided for in stipulation VIII above, as well as the project monitoring effort [Monitoring Report] and Discovery Report (see stipulations VIII and X), to the signatories and consulting and concurring parties in complete but draft form for review. The other signatories and consulting and concurring parties shall submit comments to Western within 30 days of receipt unless the signatories mutually agree upon a different time period. Comments shall be incorporated into the final report(s). Western shall distribute the final version of the report(s) to the other signatories and consulting and concurring parties. Should any signatory and consulting and concurring parties fail to respond to a request to comment within the specified time limit, Western shall assume they concur with the report(s) and any recommendations therein. All reports will be reviewed initially by the other signatories and consulting and concurring parties, except for the SHPO. A modified report will subsequently be submitted to SHPO for the same review time frames.

Should the report(s) deal with sensitive information regarding historic properties of religious or cultural significance or TCPS to tribes or other similar resources, Western shall withhold specific information as confidential from any signatory and consulting and concurring parties who lacks interest in eligibility or management concerns. This will be completed for any property based upon the

negotiations with the Tribes and/or any other interested person(s) concerning confidentiality and the treatment for these resources.

X. DISCOVERIES AND UNANTICIPATED EFFECTS

- A. Western will implement the *Plan for Discovery of Cultural Resources*, which will be part of the HPTP (see stipulation VIII), should the Western encounter a previously unknown cultural resource during the implementation of the Undertaking, or should the Project affect, directly or indirectly, a known historic property in an unanticipated manner. Where the implementation of the Undertaking may adversely affect a found component of a cultural resource which may be historic, all work within 100 feet of that find shall cease until Western can evaluate the National Register eligibility of the find and assess the probable character of the Undertaking's effects on it. Western shall consult with the other signatories and consulting and concurring parties as it evaluates the National Register eligibility of the find, assesses the Undertaking's effects on the find, and develops a resolution to any adverse effect. Discovery consultation will also involve determining if and when work at the discovery location may resume. If a previously unknown cultural resource has been determined to be damaged by the Undertaking, the resource will be evaluated for National Register eligibility. If eligible, a site damage assessment will be completed by an approved archaeologist. This report will be reviewed by the other signatories and consulting and concurring parties following review procedures in stipulation IX. Appropriate mitigation measures will be recommended in the site damage assessment.
- B. The design and execution of data recovery or other mitigation measures (treatment) would be done in consultation with the other signatories and consulting and concurring parties. Mitigation measures would be agreed upon among all signatories and consulting and concurring parties. If treatment becomes necessary, the development of a treatment plan would reflect the structure described in the HPTP as described in stipulation VIII. In the event a dispute arises during consultation on appropriate mitigation measures, Western shall proceed in accordance with stipulation XIV to resolve the issue.

XI. NATIVE AMERICAN CONSULTATION, TREATMENT OF NATIVE AMERICAN HUMAN REMAINS AND ASSOCIATED FUNERARY OBJECTS

- A. Western shall continue to facilitate consultation with the Tribes as the lead Federal agency for Section 106 compliance, and serve as the liaison and the coordinator for affairs with the Tribes.
- B. Work shall cease in a 200 ft. radius around human remains or funerary objects found in association with human remains that are encountered during inventory, evaluation, or treatment phase fieldwork, or during the implementation of the Undertaking. Western shall immediately notify the County Coroner, the SHPO,

the California Native American Heritage Commission (NAHC), the Tribes, and the appropriate land managing agency of any such find. If the human remains are determined to be those of a Native American as defined by NAGPRA (Public Law 101-601), the appropriate land managing agency would then take the lead in the treatment of those remains and the objects found in association with them by implementing that agency's procedures for complying with NAGPRA.

- C. In the event that Native American human remains or funerary objects found in association with such human remains are encountered on private or state lands, Western shall treat the remains and objects in accordance with California Public Resources Code 5097.98.

XII. IMPLEMENTATION OF THE UNDERTAKING

- A. INITIATION OF CONSTRUCTION. After Western has agreement from the other signatories and consulting and concurring parties on the initially revised draft Class III Report, on the property evaluations done under stipulations VI.B and C, and on the effects assessments done under stipulation VII.A, some construction-related activities, those listed in stipulation XII.A.1 below, would be allowed to proceed in those portions of the Undertaking's APE where no effect to historic properties has been found pursuant to the following:

1. The construction-related activities that the signatories to this PA agree may occur subsequent to the completion of the effects assessments of stipulation VII.A include only
 - i. the demarcation, set up, and use of staging areas for the Project's construction, and
 - ii. the conduct of geotechnical boring investigations.
2. The ultimate location of construction staging areas, geotechnical boring sites, and routes related to the access of each would be determined by Western in consultation with the signatories and consulting and concurring parties, would be exclusively in areas
 - i. where no historic properties, assumed or determined, exist, and
 - ii. 25 meters beyond the known boundaries of such properties.
3. Initiation of these activities would not occur until ROWs have been issued by the appropriate Land Managing Agency.
4. These construction activities would be subject to the requirements in stipulation X regarding discoveries and stipulation XI regarding human remains and funerary objects.

- B. POST-REVIEW MODIFICATIONS TO THE UNDERTAKING

1. It is anticipated that once the HPTP is finalized, certain minor modifications to the project may become necessary. Some of these modifications could include rerouting to avoid other environmental impacts, the establishment of construction camps, minor changes in access routes, and other construction contractor-dependent actions. Western shall determine whether such modification require revisions of the Undertaking's APE, and, if so, Western shall proceed in accordance with stipulation IV.B.2.
2. If a proposed modification to the Undertaking is found to adversely affect historic properties as a result of Western's efforts under stipulation XII.B.1 above, then Western shall attempt to move the activity that would cause the adverse effect, modify that activity in a manner that would avoid the adverse effect, or, if prudent and feasible, cancel the subject activity. If Western can not ultimately avoid the adverse effect, the agency shall prepare a treatment plan that follows the structure described in the HPTP for such modifications (see stipulation VIII. A. 4). Review of the plan shall be in accordance with stipulation IX above.

XIII. AMENDMENTS TO THE AGREEMENT

- A. Any signatory to this PA, through consultation, may, pursuant to 36 CFR §§ 800.6(c)(1) and (7), request an amendment to its terms, or the provisions of any attachment hereto. The signatory wishing to amend the PA shall initiate such consultation by completing the form provided as Appendix A and submitting it to Western.
- B. Western shall consult with the signatory initiating consultation on an amendment, and, if there is agreement on the principles of the amendment, Western shall submit the form to the other signatories to this PA for concurrent review and signature. After review and signature, each signatory shall return its form to Western, who will prepare the distribution copy of the amendment and distribute the resultant document to all signatories.
- C. Western and the other signatories to this PA shall consult for no more than 30 days to consider a proposed amendment. Western may extend this consultation period.
- D. If the PA is not amended through the above process, any signatory to this PA may terminate the agreement in accordance with stipulation XV below.

XIV. DISPUTE RESOLUTION

Should any party to this PA object within 30 days to any actions proposed pursuant to this PA, Western shall consult with the objecting party, as soon as possible, to try to resolve the objection. Western and the disputing party will pursue alternative dispute

resolution processes and consult with the other signatories during a 60-day period. If, within the 60 days, the consultation fails to resolve the objection or dispute, Western shall forward all documentation relevant to the dispute to the ACHP, and inform the other signatories of the status of the dispute. Within 30 days of receipt of all pertinent documentation, Western will expect that the ACHP may:

- A. advise Western that the ACHP concurs in Western's proposed response to the objection, whereupon Western will respond to the objection accordingly. The objection shall thereby be resolved; or
- B. provide Western with recommendations, which Western will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or
- C. notify Western that the objection will be referred for comment pursuant to 36 CFR § 800.7(c), and proceed to refer the objection and comment. Western shall take the resulting comments into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(l) of the NHPA. The objection shall thereby be resolved.

Should the ACHP not exercise one of the foregoing options within 30 days after receipt of all pertinent documentation, Western may assume the ACHP's concurrence in its proposed response to the objection and proceed to implement that response. The objection shall thereby be resolved.

Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute; Western's responsibility is to carry out all actions under this PA that are not the subject of the dispute will remain unchanged.

XV. TERMINATION

- A. Only the signatories may terminate this PA. If the PA is not amended as provided for in Section XIII above, or if any signatory proposes termination of the PA for other reasons, the signatory proposing termination shall notify the other signatories in writing, explain the reasons for proposing the termination, and consult with the other signatories for at least 30 days to seek alternatives to termination. Should such consultation result in an agreement on an alternative to termination, then the signatories shall proceed in accordance with the terms of that agreement.
- B. Should that consultation fail, the signatory proposing termination may terminate the PA by promptly notifying the other signatories to this PA in writing. Termination hereunder shall render this PA without further force or effect.
- C. If this PA is terminated hereunder and if Western determines its Undertaking will nonetheless proceed, then Western shall either consult in accordance with 36 CFR

§ 800.6 to develop a new agreement or request the comments of the Council pursuant 36 CFR Part 800.

XVI. DURATION OF THIS AGREEMENT

- A. Unless the PA is terminated pursuant to stipulation XV above, another agreement executed for the Undertaking supersedes it, or the Undertaking itself has been terminated, this PA will remain in full force and effect until Western, in consultation with the other signatories, determines that construction of all aspects of the Undertaking has been completed and that all terms of this PA have been fulfilled in a satisfactory manner. Upon a determination by Western that construction of all aspects of the Undertaking has been completed and that all terms of this PA have been fulfilled in a satisfactory manner, Western will notify the other signatories of this PA in writing of the agency's determination. This PA will terminate and have no further force or effect on the day that Western so notifies the other signatories to the PA.
- B. The terms of this PA shall be satisfactorily fulfilled within five (5) years following the date of execution by the signatories. If Western determines that this requirement cannot be met, the signatories to this PA will consult to reconsider its terms. Reconsideration may include continuation of the PA as originally executed, amendment, or termination. In the event of termination, Western will comply with stipulation XV.C if it determines that the Undertaking will proceed notwithstanding termination of this PA.
- C. If the Undertaking has not been implemented within 5 years following execution of this PA by the signatories, this PA shall automatically terminate and have no further force or effect. In such event, Western shall notify the other signatories to this PA, in writing, and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800.

XVII. WITHDRAWAL OF WESTERN FROM THE PROJECT

If for some reason Western should decide to withdraw from the Project, Western shall inform the other signatories to this PA of its intention to withdraw as soon as is practicable. Upon receipt of Western's notification of its withdrawal from the Project, the USFS BLM, Reclamation, USACE, and the other signatories to this PA shall consult to consider whether another Federal agency should replace Western as the lead agency for the implementation of this PA, or whether this PA should be terminated. The withdrawal consultation and decision process of this stipulation shall not exceed a period of 60 days from the receipt of the above notification from Western.

Nothing in this stipulation shall be construed as a constraint on the right of the SHPO to terminate the present PA should Western, for any reason, fail to fully implement this PA.

Nothing in this stipulation shall be construed as a constraint on the right of the SHPO to terminate the present PA should Western, for any reason, fail to fully implement this PA.

XVIII. EFFECTIVE DATE

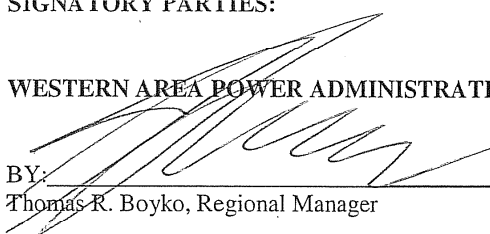
This PA shall take effect on the date that it has been executed by Western, the USFS, BLM, Reclamation, USACE, and the SHPO.

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

Programmatic Agreement-Trinity Public Utilities District Direct Interconnection Project

SIGNATORY PARTIES:

WESTERN AREA POWER ADMINISTRATION, SIERRA NEVADA REGION

BY:  DATE: 10/9/07
Thomas R. Boyko, Regional Manager

U.S.FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST

BY: _____ DATE: _____
J. Sharon Heywood, Forest Supervisor

U.S. BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE

BY: _____ DATE: _____
Steven W. Anderson, Redding Field Office Manager

U.S. BUREAU OF RECLAMATION, MID-PACIFIC REGION

BY: _____ DATE: _____
John F. Davis, Acting Regional Director

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

BY: _____ DATE: _____
Craig W. Kiley, Lieutenant Colonel, U.S. Army, Commanding

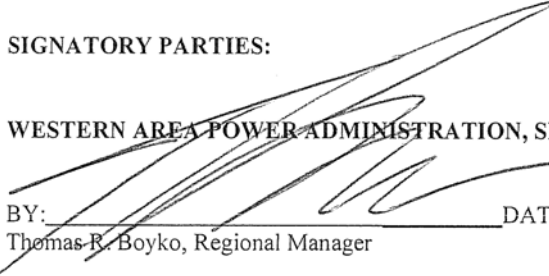
**CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

BY: _____ DATE: _____
Milford Wayne Donaldson, State Historic Preservation Officer

Programmatic Agreement-Trinity Public Utilities District Direct Interconnection Project

SIGNATORY PARTIES:

WESTERN AREA POWER ADMINISTRATION, SIERRA NEVADA REGION

BY:  _____
Thomas R. Boyko, Regional Manager

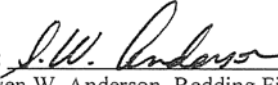
DATE: 10/15/07

U.S. FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST

BY: _____
J. Sharon Heywood, Forest Supervisor

DATE: _____

U.S. BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE

BY:  _____
Steven W. Anderson, Redding Field Office Manager

DATE: 10/10/07

U.S. BUREAU OF RECLAMATION, MID-PACIFIC REGION

BY: _____
John F. Davis, Acting Regional Director

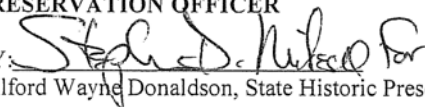
DATE: _____

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

BY: _____
Craig W. Kiley, Lieutenant Colonel, U.S. Army, Commanding

DATE: _____

**CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

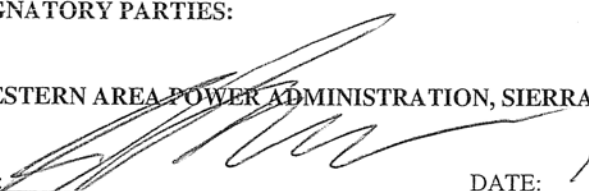
BY:  _____
Milford Wayne Donaldson, State Historic Preservation Officer

DATE: 10/15/07

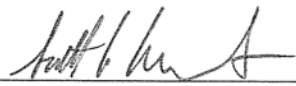
Programmatic Agreement-Trinity Public Utilities District Direct Interconnection Project

SIGNATORY PARTIES:

WESTERN AREA POWER ADMINISTRATION, SIERRA NEVADA REGION

BY:  DATE: 10/19/07
Thomas R. Boyko, Regional Manager

U.S. FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST

BY:  DATE: 10/10/2007
For J. Sharon Heywood, Forest Supervisor

U.S. BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE

BY: _____ DATE: _____
Steven W. Anderson, Redding Field Office Manager

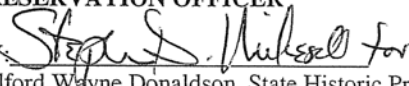
U.S. BUREAU OF RECLAMATION, MID-PACIFIC REGION

BY: _____ DATE: _____
John F. Davis, Acting Regional Director

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

BY: _____ DATE: _____
Craig W. Kiley, Lieutenant Colonel, U.S. Army, Commanding

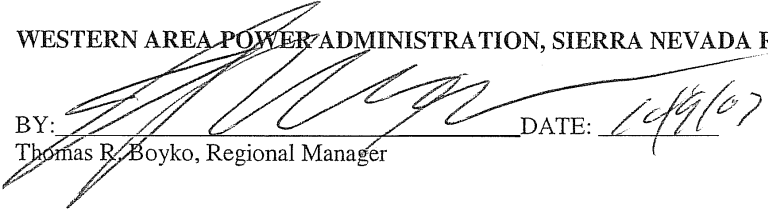
**CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

BY:  DATE: 10/15/07
Milford Wayne Donaldson, State Historic Preservation Officer

Programmatic Agreement-Trinity Public Utilities District Direct Interconnection Project

SIGNATORY PARTIES:

WESTERN AREA POWER ADMINISTRATION, SIERRA NEVADA REGION

BY: 
Thomas R. Boyko, Regional Manager

DATE: 10/9/07

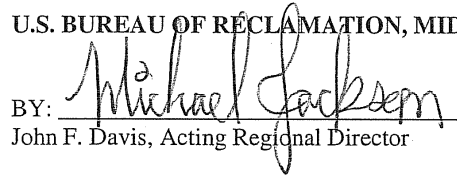
U.S. FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST

BY: _____ DATE: _____
J. Sharon Heywood, Forest Supervisor

U.S. BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE

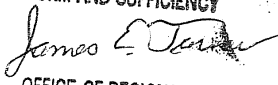
BY: _____ DATE: _____
Steven W. Anderson, Redding Field Office Manager

U.S. BUREAU OF RECLAMATION, MID-PACIFIC REGION

for BY: 
John F. Davis, Acting Regional Director

DATE: 10/10/07

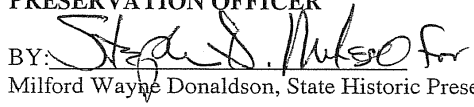
APPROVED AS TO LEGAL
FORM AND SUFFICIENCY


OFFICE OF REGIONAL SOLICITOR
DEPARTMENT OF THE INTERIOR

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

BY: _____ DATE: _____
Craig W. Kiley, Lieutenant Colonel, U.S. Army, Commanding

**CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

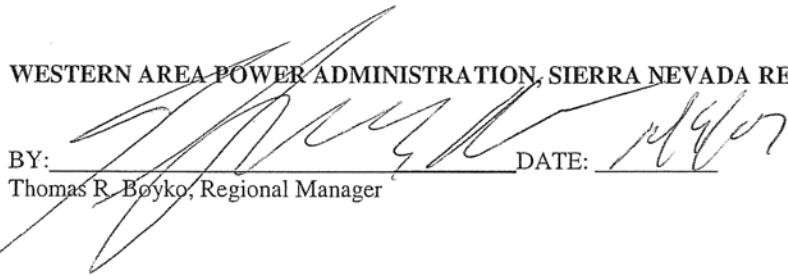
BY: 
Milford Wayne Donaldson, State Historic Preservation Officer

DATE: 10/15/07

Programmatic Agreement-Trinity Public Utilities District Direct Interconnection Project

SIGNATORY PARTIES:

WESTERN AREA POWER ADMINISTRATION, SIERRA NEVADA REGION

BY:  DATE: 10/9/07
Thomas R. Boyko, Regional Manager

U.S. FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST

BY: _____ DATE: _____
J. Sharon Heywood, Forest Supervisor

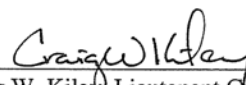
U.S. BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE

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Steven W. Anderson, Redding Field Office Manager

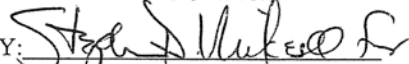
U.S. BUREAU OF RECLAMATION, MID-PACIFIC REGION

BY: _____ DATE: _____
John F. Davis, Acting Regional Director

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

BY:  DATE: 10/11/07
Craig W. Kiley, Lieutenant Colonel, U.S. Army, Commanding

**CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

BY:  DATE: 10/15/07
Milford Wayne Donaldson, State Historic Preservation Officer

CONCURRING PARTIES:

TRINITY PUBLIC UTILITIES DISTRICT

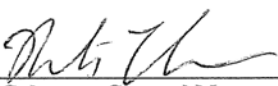
BY: _____ DATE
Rick Coleman, General Manager

NOR-REL-MUK NATION

BY: _____ DATE
John W. Hayward, Chairperson

CONCURRING PARTIES:

TRINITY PUBLIC UTILITIES DISTRICT

BY:  DATE 10/11/07
Rick Coleman, General Manager

NOR-REL-MUK NATION

BY: _____ DATE _____
John W. Hayward, Chairperson

APPENDIX A

TO THE PROGRAMMATIC AGREEMENT REGARDING
THE CONSTRUCTION OF THE TRINITY PUBLIC UTILITIES DISTRICT DIRECT
INTERCONNECTION PROJECT

Plan for Discovery of Cultural Resources

In the event that previously unknown cultural resources are discovered within the area of potential effects from construction activities of Trinity Public Utilities District Direct Interconnection Project (Project), or should those activities directly or indirectly impact known resources in an unanticipated manner, the following actions, at a minimum, will be initiated by the Western Area Power Administration (Western) or the agency having jurisdiction over the land involved, and/or a representative duly authorized to perform these tasks:

1. All activities will halt in the immediate vicinity of the discovery and all actions will be directed away from an area at least 200 feet from the point of discovery.
 - a. Western and/or the agency having jurisdiction over the land involved will be notified immediately (within 24 hours) and will have a cultural resources specialist and/or a tribal monitor, with the proper expertise for the suspected resource type, on-site as soon as possible.
 - b. If there is a cultural resource monitor at that location or in the general area of the discovery, that person will be called in to assess the find.
 - c. Western will notify the appropriate parties within 15 working days.
 - d. In the event that a cultural resource specialist or other necessary persons are not immediately available, Western and/or the agency having jurisdiction over the land involved may be required to cover and/or otherwise protect the discovery until such time that the appropriate parties can be present for inspection and/or evaluation.
2. Upon arriving at the site of the discovery, the cultural resource specialist shall assess the resource. The assessment shall include:
 - a. The nature of the resource (e.g., number and kinds of artifacts, presence/absence of features): This may require screening of already disturbed deposits, photographs of the discovery, and/or other necessary documentation.

- b. The spatial extent of the resource: This may require additional subsurface testing, mapping or inspection, as is appropriate to the resource.

The nature of deposition/exposure: This may require interviews with construction personnel, other persons having knowledge concerning the resource or, in rare instances, the expansion of existing disturbances to establish the characteristics of the deposits.

- 3. Resources will be considered as a "site" should they meet any of the criteria established by the agency that has jurisdiction over the land. The site will be evaluated in terms of the criteria of eligibility for the National Register of Historic Places established at 36 CFR Part 60.4. Consultation with the appropriate parties shall be initiated prior to making the necessary determination. Western shall then make a determination of eligibility and consult with the appropriate parties to determine any mitigation efforts necessary to remove further impacts. If necessary, Western shall prepare a treatment plan following the guidance provided in the Historic Properties Treatment Plan, as defined in Stipulation VI of the Programmatic Agreement (PA).
 - a. The cultural resource specialist will complete a site form, if the find meets site definition, or complete an isolated find form, if the find does not meet the site definition. They will also complete the Cultural Resource Discovery Form, provided below, which includes basic information on how and when the discovery was made. The site form/isolated find form and discovery form will be sent to appropriate parties for review and comment.
 - b. Any items meeting the definition, provided for in the Native American Graves Protection and Repatriation Act (NAGPRA), of human remains and/or cultural items encountered in a discovery situation will be handled according to the provisions of NAGPRA or California state laws provided for within the PA.
 - c. If the site is determined to be damaged, according to Stipulation VIII, a site damage assessment will be conducted by an approved cultural resource specialist. A report will be written and sent to all signatories for review and comments, following Stipulation VII.
 - d. If discoveries are made on the Project, a cultural resources discovery report will be written at the end of the Project by the Project's cultural resource specialist to be distributed as defined in Stipulation VII. This report will be a stand-alone document describing the project, background, discoveries and the reasons for the discoveries.

**CULTURAL RESOURCE DISCOVERY FORM
TRINITY PUBLIC UTILITIES DISTRICT DIRECT
INTERCONNECTION PROJECT**

DATE OF DISCOVERY _____ LAND STATUS _____

LEGAL T ____ R ____ SECTION _____ 1/4 ____ 1/4 ____ 1/4

TOPOGRAPHIC MAP (include photocopy of
topo) _____

DESCRIBE HOW DISCOVERY WAS MADE, NAMES OF CONTACTS

DESCRIBE DISCOVERY/CLARIFY IF MEETS SITE DEFINITION

PHOTOGRAPHS YES ____ NO ____

HUMAN REMAINS FOUND YES ____ NO ____

If yes, NAME OF PERSON CONTACTED _____ DATE _____

SITE FORM COMPLETED (attach) YES ____ NO ____

ISOLATED FIND FORM COMPLETED (attach) YES ____ NO ____

PERSON COMPLETING THIS FORM _____

DATE OF THIS FORM _____

Page 2

SKETCH MAP OF DISCOVERY

INCLUDE NEAREST PROJECT COMPONENT, SCALE AND NORTH ARROW

APPENDIX B

Amendment Form

AMENDMENT
DATE:

PROGRAMMATIC AGREEMENT
AMONG
**THE WESTERN AREA POWER ADMINISTRATION, THE UNITED STATES
FOREST SERVICE, SHASTA-TRINITY NATIONAL FOREST, THE UNITED
STATES BUREAU OF LAND MANAGEMENT, REDDING FIELD OFFICE,
THE UNITED STATES BUREAU OF RECLAMATION, MID-PACIFIC
REGION, THE UNITED STATES ARMY CORPS OF ENGINEERS, SAN
FRANCISCO DISTRICT, AND THE CALIFORNIA STATE HISTORIC
PRESERVATION OFFICER**

REGARDING THE CONSTRUCTION OF THE TRINITY PUBLIC UTILITIES
DISTRICT INTERCONNECTION PROJECT

1. Need for Amendment:

2. Amendment:

**CLEAN WATER ACT
SECTION 404
U.S. ARMY CORPS OF ENGINEERS**

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MAY 10 2007

Mr. David Ammerman
Eureka Field Office
U.S. Army Corps of Engineers
601 Startare Street
Eureka, CA 95501

Dear Mr. Ammerman:

The Western Area Power Administration (Western) proposes to construct the Trinity Public Utilities District (PUD) Direct Interconnection Project (Proposed Project), which would be located in Trinity County, California, in portions of Townships 33 and 34 North, and Ranges 8 and 9 West (Mt. Diablo Meridian). The objective of the project is to enhance the reliability of service for the customers of Trinity PUD by establishing a new direct interconnection with Western's Central Valley Project transmission system. The Proposed Project would require spanning the Trinity River and other streams and dry washes with the 80-foot wide transmission line (T-line) right-of-way and/or crossing by existing or new access roads. Western is requesting a U.S. Army Corps of Engineers determination of jurisdictional wetlands and waters of the United States. The enclosed "Wetlands and Waters of the U.S. Report, April 2007" was prepared for your review in making your determination.

The major component of the Proposed Project would be an approximately 16-mile long, 60-kilovolt (kV) overhead T-line called the Trinity County Direct Interconnect. The Proposed Project includes three T-line segments and one small switchyard. Segment one of the Proposed Project would cross the Trinity River below Trinity Dam and again below Lewiston Dam near the Trinity River Fish Hatchery. Segment three of the Proposed Project would cross Rush Creek and Little Browns Creek.

Wetlands were delineated in accordance with the COE 1987 Wetland Delineation Manual. Routine wetland delineations were conducted on the ground June 21-24, 2005, for all potential wetlands identified within a 100-foot-wide corridor along the proposed T-line route. Similar methods were also conducted along the proposed new access roads and areas for access road improvements June 7-9, 2006.

Non-wetland (other) waters of the United States were delineated pursuant to guidance in the COE *Final Summary Report: Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest* (COE 2001). Waters of the United States were identified in the field as part of the wetland delineation field work. Surface flow indicators identified in the field included flowing water, water marks, litter, and sediment deposits.

Thirty-four rivers, including creeks or dry washes, and 10 wetlands have been identified as proposed jurisdictional wetlands and waters of the United States. The majority of the wetlands consisted of fringe wetlands (approximately 5- to 10-feet wide) on the side of streams or rivers. Three wetland types identified included palustrine emergent, palustrine scrub/shrub, and riverine rocky shore.

Once you have made your determination on jurisdictional wetlands and waters of the United States, Western would like to discuss the most appropriate permitting strategy for this proposed project.

Aerials of the washes using a scale of 1 inch = 200 feet are not included with this submittal. However, in accordance with the January 30, 2007, telephone conversation between you and Ms. Lynn Almer, they will be provided at your request.

If you have questions or require additional information, please contact me at 916-353-4549 or Ms. Almer in our Lakewood, Colorado, office at 720-962-7324.

Sincerely,

ORIGINAL SIGNED BY

Steve Tuggle
Natural Resources Manager

Enclosures (2 copies of each)
Wetlands and Waters of the U.S. Report, April 2007
Full size United States Geological Survey quadrangle sheets (3)
Trinity PUD Project Overview, aerial photograph with proposed T-line, 22" x 34"
Trinity PUD Project Overview, topographic quadrangle with proposed T-line, 22" x 34"

cc:
(w/o enclosures)

Mr. Mark Wieringa
12155 W. Alameda Parkway
Lakewood, CO 80228

Ms. Lynn Almer
12155 W. Alameda Parkway
Lakewood, CO 80228

JUN - 8 2007

Mr. David Ammerman
Eureka Field Office
U.S. Army Corps of Engineers
601 Startare Street
Eureka, CA 95501

Dear Mr. Ammerman:

As requested in your May 18, 2007, phone call, enclosed is a table estimating waters of the United States within the 80-foot-wide transmission line Right-of-way (ROW) for the proposed Trinity Public Utilities District Direct Interconnection Project, which would be located in Trinity County, California. The table provides acreage for each individual watercourse and associated wetlands, where they occur. A total of 2.40 acres of waters of the United States are located within the ROW, comprised of 0.30 acres of wetlands and 2.1 acres of other waters of the United States.

The Trinity River and other streams and dry washes would be spanned by the transmission line and/or crossed by existing or proposed new access roads. These access roads would cross approximately 0.11 acres of waters of the United States (included in the total acreage).

If you have questions or require additional information, please contact Ms. Lynn Almer in our Lakewood, Colorado, office at 720-962-7324, or me at 916-353-4549. Ms. Almer will contact you to confirm the date(s) of the site visit.

Sincerely,

Cherie Johnston-Waldear
for

Stephen Tuggle
Natural Resources Manager

Enclosure

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DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

AUG 31 2007

Regulatory Branch

SUBJECT: File No. 400486N

Mr. Steve Tuggle
Natural Resources Manager
U.S. Department of Energy
Western Area Power Administration
Sierra Nevada Customer Service Region
114 Parkshore Drive
Folsom, California 95630-4710

Dear Mr. Tuggle:

This letter is in response to your letter dated May 10, 2007, with attachment titled, *Trinity Public Utilities District Direct Interconnection Project, Western Area Power Administration – Sierra Nevada Region, Wetlands and Waters of the U.S. Report*, prepared by Western Area Power Administration (Western) dated April 2007; and your letter of August 13, 2007, requesting confirmation of the extent of Corps of Engineers jurisdiction along the proposed 16-mile power line interconnection right-of-way. The project area is located along the proposed right-of-way between the Trinity Dam and Lewiston Dam, and between Lewiston Dam and a point approximately 8 miles south of the Town of Weaverville, in Trinity County, California. The proposed power line right-of-way crosses numerous tributaries to Lewiston Reservoir and the main stem Trinity River.

Enclosed are maps showing the extent and location of Corps of Engineers jurisdiction (Enclosure 1 in seven sheets). We have based this jurisdictional delineation on the current conditions on the site, as verified during a site visit performed by our Eureka Office staff on June 28, 2007. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date. Since your delineation information was received before June 5, 2007, the effective date of the official interagency guidance interpreting the Supreme Court decision, *Rapanos v. United States*, 126 S. Ct. 2208 (2006), the Corps did not apply this guidance in rendering this jurisdictional determination for the project right-of-way.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

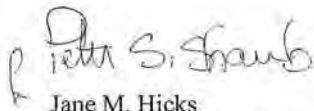
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Your proposed activity is within our jurisdiction and a permit may be required for your project. However, you have stated that project impacts (0.06 acre) would not exceed the reporting threshold for Nationwide Permit notification. A copy of the Nationwide Permit General Conditions is attached to guide you in compliance with the General Conditions (Enclosure 2). Our Nationwide Permits and Regional General Permits have already been issued to authorize certain activities provided specified conditions are met.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart (Enclosure 3) and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA)(Enclosure 4). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

You may refer any questions on this matter to David Ammerman of my Regulatory staff by telephone at 707-443-0855. All correspondence should be addressed to the Regulatory Branch, Eureka Field Office, USACE, P.O. Box 4863, Eureka, California 95502, referencing the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at our website: <http://per2.nwp.usace.army.mil/survey.html>.

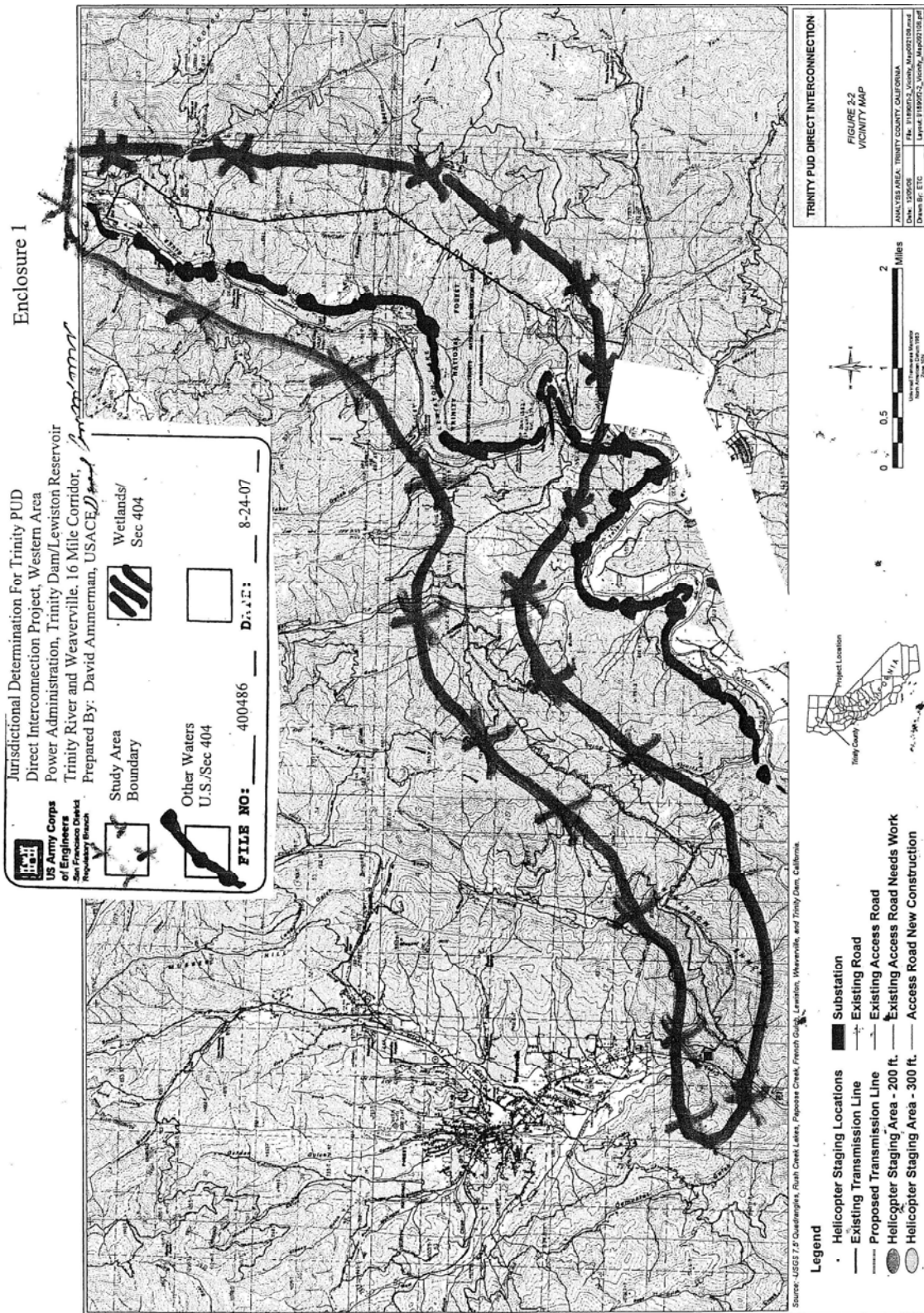
Sincerely,


Jane M. Hicks
Chief, Regulatory Branch

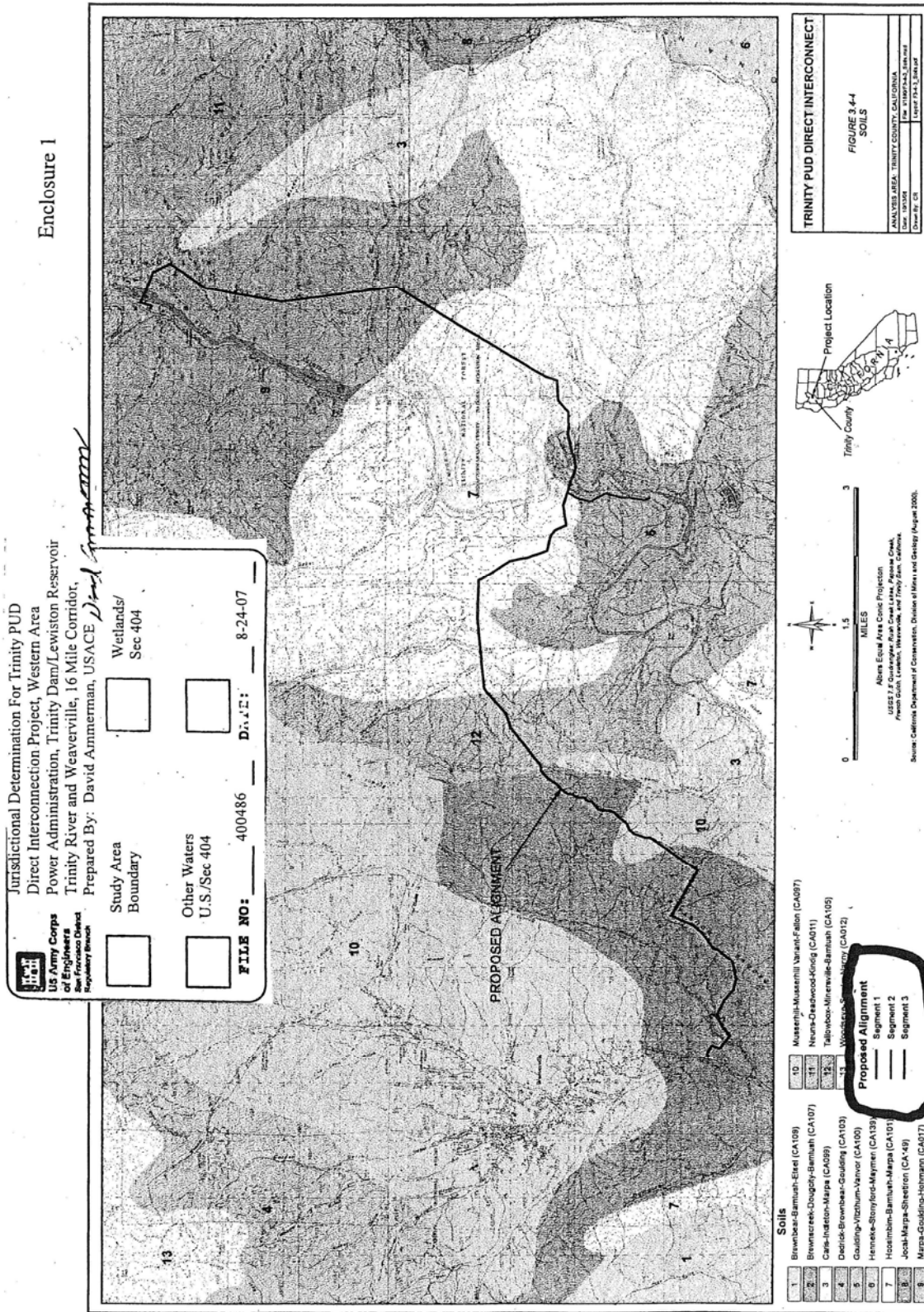
Enclosures

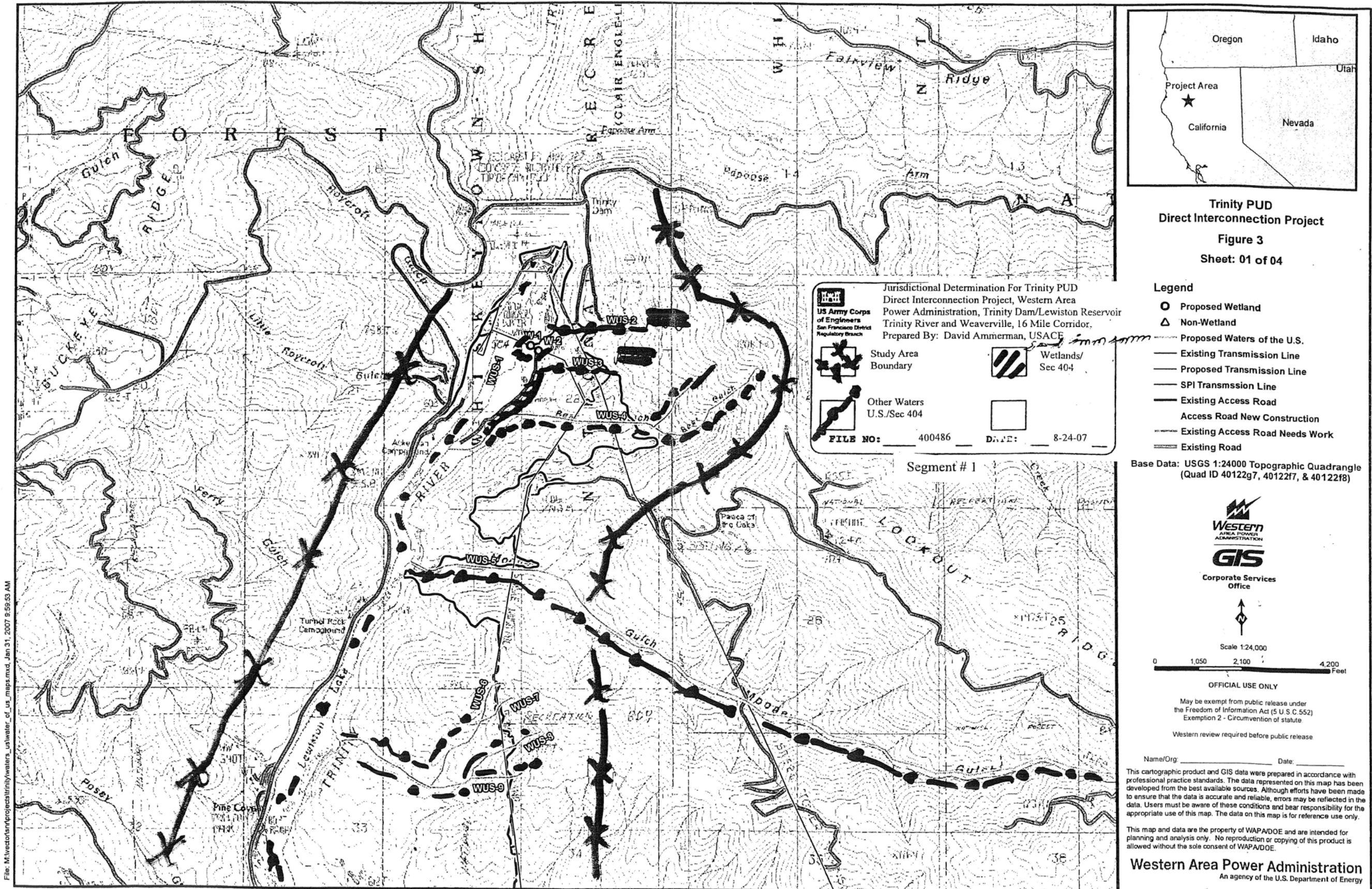
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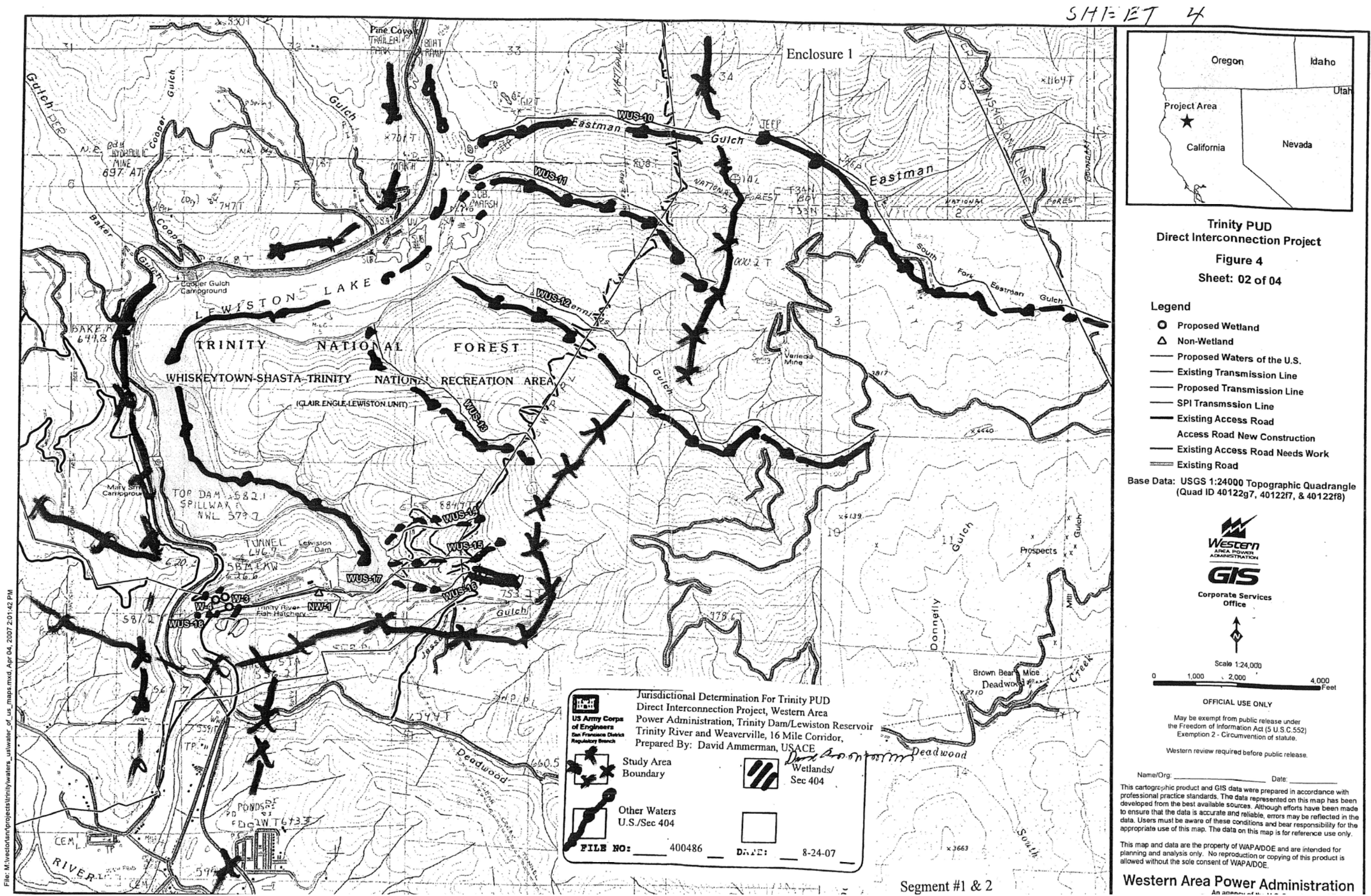
CA RWQCB, Santa Rosa, CA



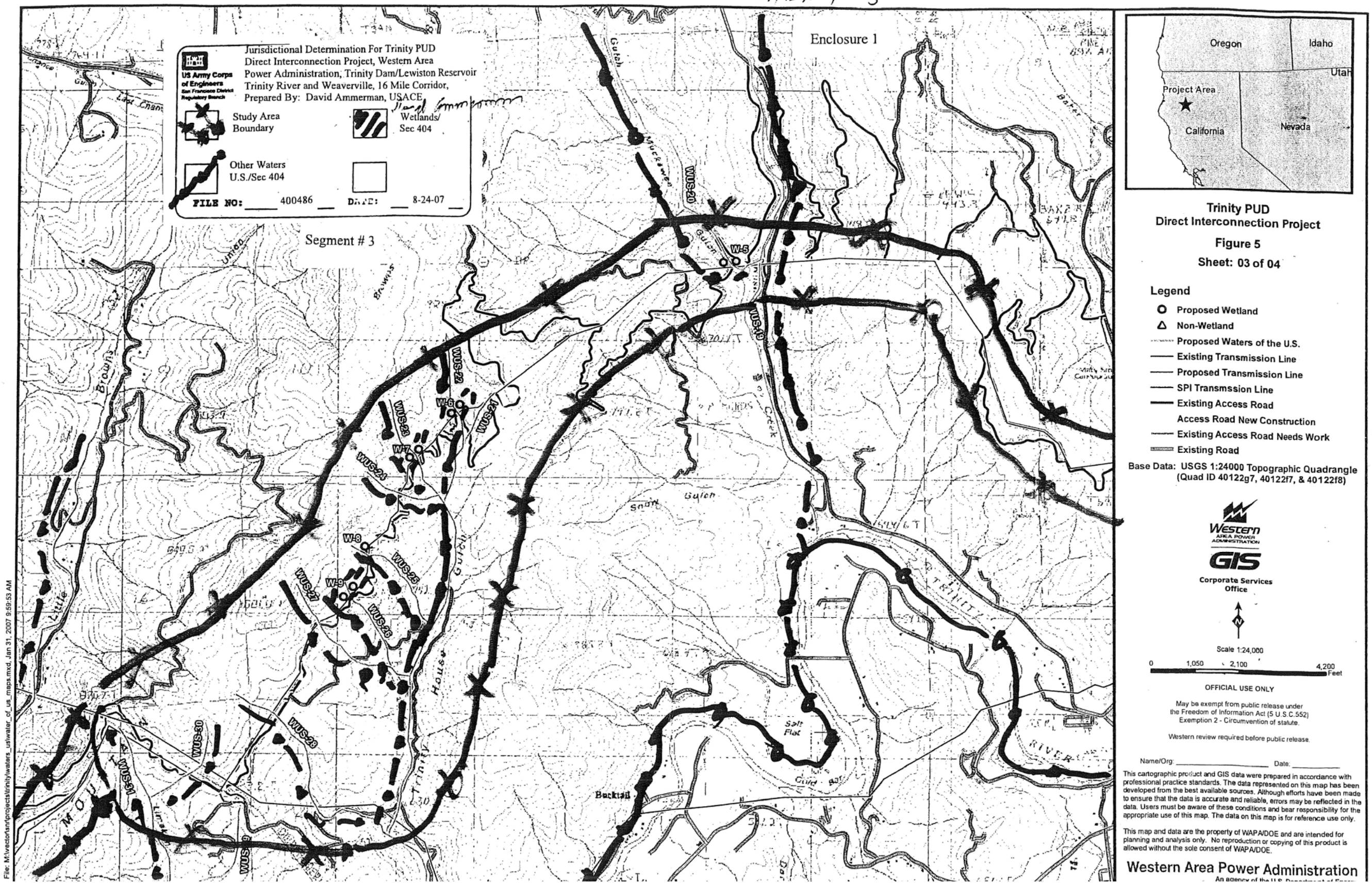
Enclosure 1

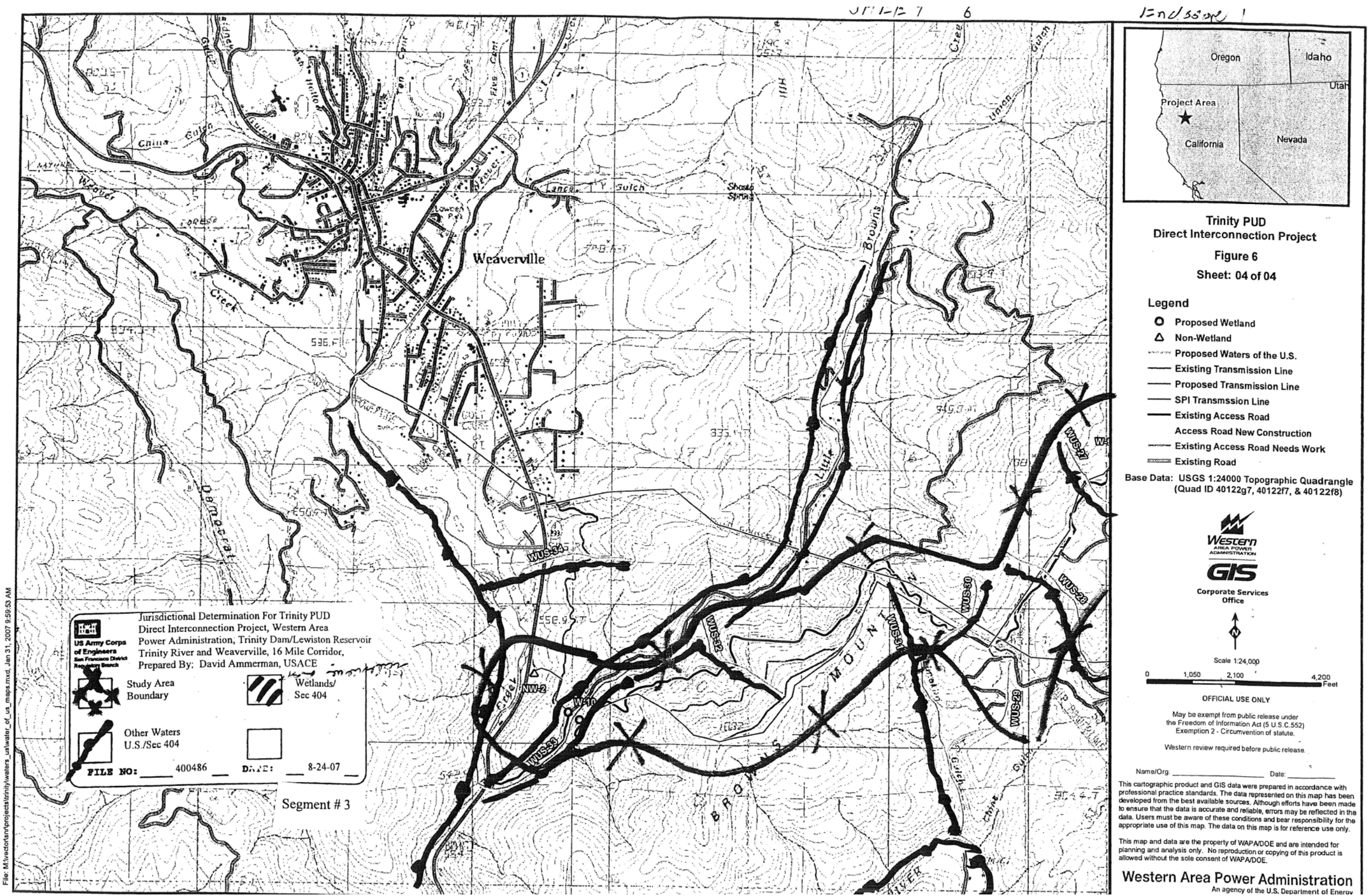






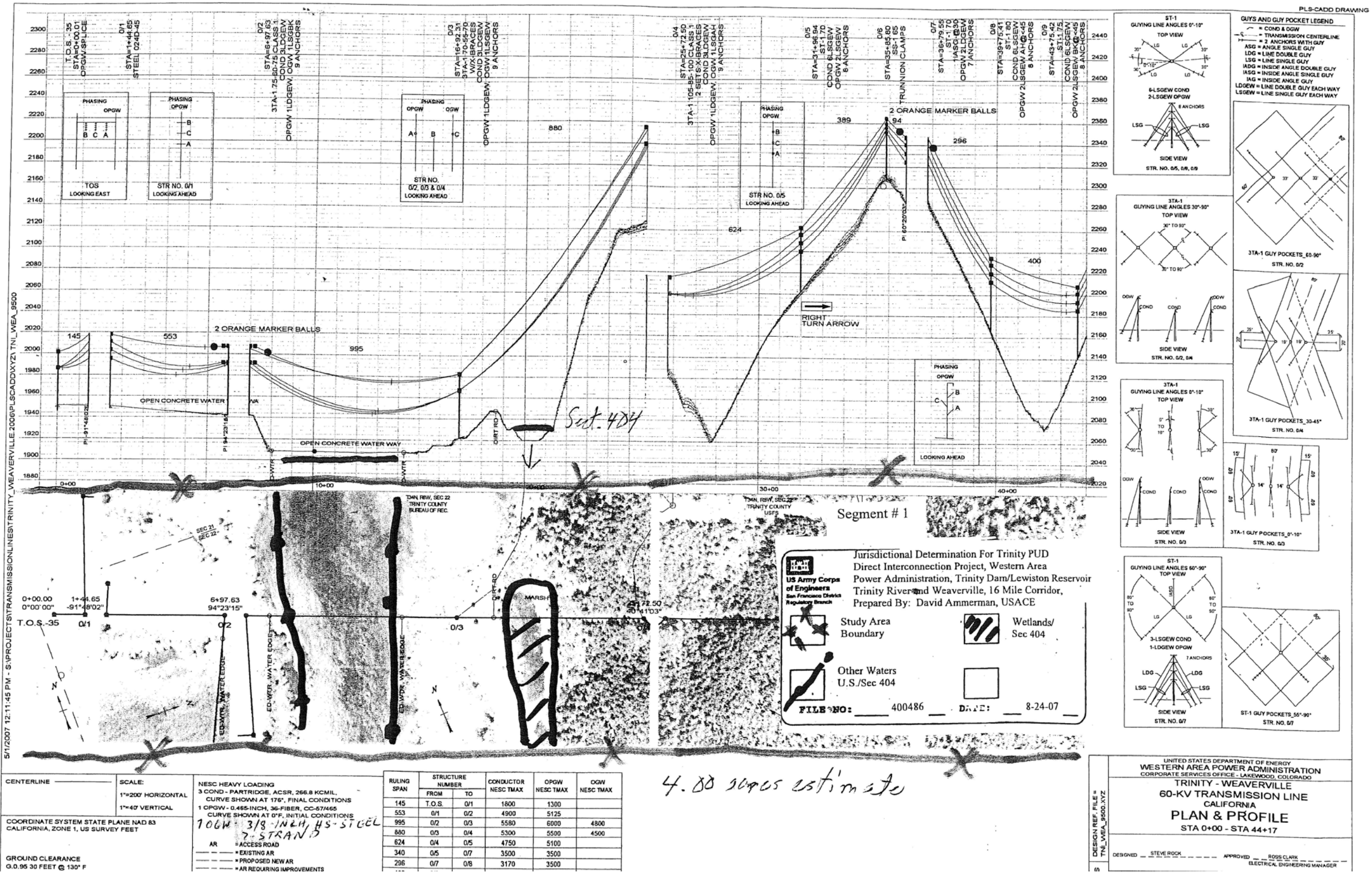
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Sheet 7

Endorse 1



Nationwide Permit 12 - Utility Line Activities

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States. **Utility lines:** This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area. Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a French drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody. **Utility line substations:** This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities. **Foundations for overhead utility line towers, poles, and anchors:** This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. **Access roads:** This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows. This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit. This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. **Notification:** The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect

navigation. **Note 2:** Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills. **Note 3:** Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Federal Register / Vol. 72, No. 47 / Monday, March 12, 2007 / Notices 11191

Enclosure 2 - Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

1. *Navigation.* (a) No activity may cause more than a minimal adverse effect on navigation.
(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. *Aquatic Life Movements.* No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. *Spawning Areas.* Activities in spawning areas during spawning seasons must be avoided to the

maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. *Migratory Bird Breeding Areas.* Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. *Shellfish Beds.* No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. *Suitable Material.* No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. *Water Supply Intakes.* No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. *Adverse Effects From Impoundments.* If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. *Management of Water Flows.* To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction

course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. *Fills Within 100-Year Floodplains.* The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. *Equipment.* Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. *Soil Erosion and Sediment Controls.* Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. *Removal of Temporary Fills.* Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. *Proper Maintenance.* Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and

Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. *Tribal Rights*. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. *Endangered Species*. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction

notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

18. *Historic Properties*. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified

properties. For such activities, the preconstruction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete preconstruction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110(k) of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely

affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

- (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
- (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
- (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed $\frac{1}{10}$ acre and require preconstruction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a projectspecific waiver of this requirement. For wetland losses of $\frac{1}{10}$ acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.
- (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.
- (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of $\frac{1}{2}$ acre, it cannot be used to authorize any project resulting in the loss of greater than $\frac{1}{2}$ acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as

necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activityspecific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The

district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work

authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee) _____
(Date) _____

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
- (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. (a) *Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity:

- (1) Until notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the

district or division engineer; or
(2) If 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to

determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than $\frac{1}{10}$ acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) *Form of Pre-Construction*

Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) *Agency Coordination:* (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring preconstruction notification to the district engineer that result in the loss of greater than $\frac{1}{10}$ -acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each preconstruction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will

consider any comments received to decide whether the NWP 37 authorization should be modified,

suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) *District Engineer's Decision:* In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than $\frac{1}{10}$ acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN.

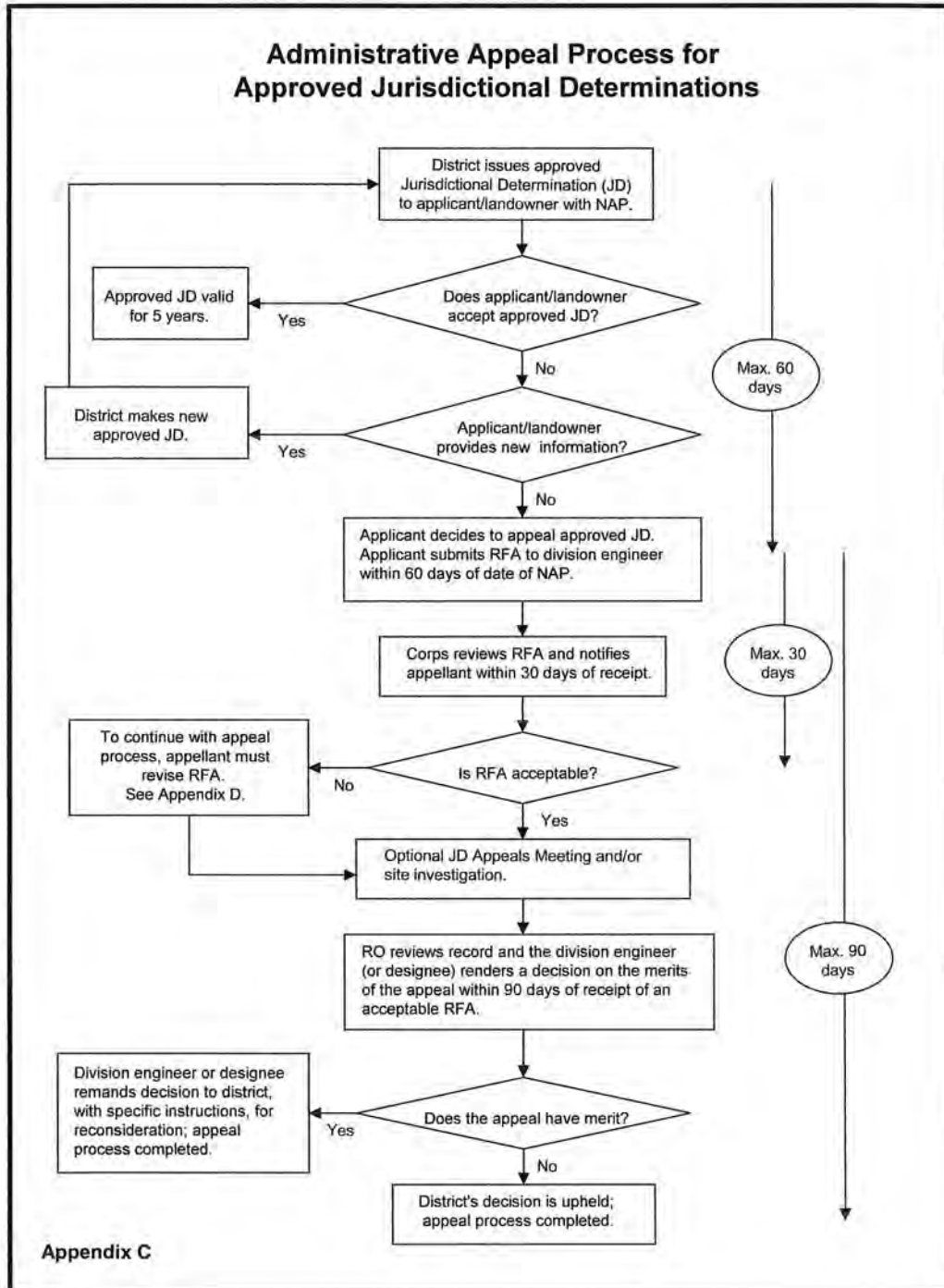
Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will

expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. *Single and Complete Project.* The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

End 3



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: Western Powers Administration	File No. 2007-400486N	Date: 08-31-2007
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E
SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331. A: INITIAL PROFFERED PERMIT: You may accept or object to the permit. - ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT ENGINEER for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. - OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this Notice and return the Notice to the DISTRICT ENGINEER. Your objections must be received by the DISTRICT ENGINEER within 60 days of the date of this Notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your NOTICE, the DISTRICT ENGINEER will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT ENGINEER will send you a proffered permit for your reconsideration, as indicated in Section B below. B: PROFFERED PERMIT: You may accept or appeal the permit - ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT ENGINEER for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. - APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this NOTICE and sending the NOTICE to the DIVISION ENGINEER. This Notice must be received by the DIVISION ENGINEER within 60 days of the date of this Notice. C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice sending the Notice to the DIVISION ENGINEER. This Notice must be received by the DIVISION ENGINEER within 60 days of the date of this Notice. D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information. - ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this Notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD. - APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION ENGINEER. This Notice must be received by the DIVISION ENGINEER within 60 days of the date of this Notice. E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.		

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT		
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)		
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:		
If you have questions regarding this decision and/or the appeal process you may contact: Ms. Jane M. Hicks, Chief, Regulatory Branch U.S. Army Corps of Engineers, San Francisco District 1455 Market Street, Attn: CESP-N-OR-R San Francisco, CA 94103-1398 Tel. (415) 503-6771 FAX (415) 503-6690	If you only have questions regarding the appeal process you may also contact: Mr. Douglas R. Pomeroy, Appeal Review Officer U.S. Army Corps of Engineers, South Pacific Division 1455 Market Street, Attn: CESP-D-PDS-O San Francisco, CA 94103-1399 Tel. (415) 503-6574 FAX (415) 503-6646	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

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APPENDIX G

COMMENTS AND RESPONSES

G.1 OVERVIEW OF THE PUBLIC COMMENT PROCESS

Western distributed the Draft Environmental Impact Statement (EIS) to several Federal agencies, including the U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), Bureau of Land Management (BLM), Bureau of Reclamation (Reclamation), and National Marine Fisheries Service (NMFS). In addition, several State of California, regional, county, and local agencies received the Draft EIS for review, as did several Native American tribes, private and public organizations and institutions, and the news media. Copies of the Draft EIS were also made available to the general public at the Trinity County and Shasta County Libraries. Public hearings were held, and announcements of the hearings were printed in local newspapers. Two hearings were planned, but no one from the public attended the hearing in Redding, California.

G.1.1 Comment Process

Western invited the above-mentioned groups and individuals to provide comments on the Draft EIS. Reviewers were invited to submit written comments directly to Western's Sierra Nevada Region Office in Folsom, California, or to provide oral comments at the public hearing. Written and oral comments were treated equally. All comments postmarked by the date of the close of the comment period were considered in preparing the Final EIS. In addition, during the preparation of the Final EIS, Western consulted with two of the cooperating agencies, the USFS and BLM, on issues that were of interest to them.

The public hearing was held during the Draft EIS review period on March 6, 2007, at the Best Western Victorian Inn in Weaverville, California. The hearing was part of Western's continuing efforts to provide opportunities for public participation in the decision-making process and meet the four objectives of such participation, namely to (1) heighten public awareness and encourage open communication throughout the development of the EIS; (2) be flexible and responsive to the issues and needs of the public, Western's customers, and public agencies; (3) solicit input on the scope of issues that should be addressed in the Draft EIS; and (4) identify significant issues related to the proposed action.

Western received 15 written comment letters representing 13 different individuals and public and private organizations. It also received oral comments from two individuals at the public hearing. Section G.2 has a table that lists the persons and organizations that submitted written comments, and section G.3 has another table that lists the persons who provided oral comments at the public hearing. The comment letters and Western's responses to them and a transcript of the public hearing and Western's responses at the hearing are provided at the end of this appendix.

G.1.2 Issues Raised during Public Comment Process

The public raised a number of issues in their written comments. The people were mostly concerned with particular analyses presented in Draft EIS. Among the issues were the following:

- Erosion control to prevent the sedimentation of streams resulting from construction traffic going over stream crossings,
- Specific permitting and mitigation measures that address such erosion,
- Estimates of the extent of direct and cumulative impacts from the project, and
- Analysis of impacts to the northern spotted owl.

Several modifications were made to the Draft EIS to address these issues. These are described in the respective comment responses and summarized in section G.4.

Oral comments made at the public hearing were chiefly concerned with the relative merits of the proposed transmission line that would be constructed mainly of wood poles and a line constructed of steel poles. A second line of comments involved a private landowner's initial concern about the placement of a pole on his property. The landowner later noted that the pole had been relocated to his satisfaction. Oral comments did not result in any revisions to the Draft EIS.

Revisions were made to the Draft EIS as a result of the consultations with the USFS and BLM. Additional analyses were done and additional clarifications were made in the areas of soil erosion, geology, watershed impacts, and herbicide risks. Further revisions were made as a result of a technical and editorial review. Neither these revisions, nor those resulting from agency consultation, affected the conclusions of the draft EIS; they were made to address the technical quality of the document. All of the resultant substantive content changes (not the editorial changes) to the Draft EIS text are identified in the Final EIS by a vertical line in the margin of the page next to the changed text. The agency consultation and technical review process and resultant modifications are described in section G.4.

G.2 WRITTEN COMMENTS

The written comments and responses begin on page G-5. Written comment submittals are reproduced in their entirety on the left-hand pages, with individual comments delineated by sequentially numbered sidebars. Responses to the individual comments are provided on the facing right-hand pages; each response is denoted with the corresponding comment number. **Table G-1** lists the persons or organizations that provided written comments and the pages on which those comments can be found.

TABLE G-1 Persons or Organizations That Provided Written Comments

Comment ID	Person or Organization	Page No.
EPA	U.S. Environmental Protection Agency	G-6
DOI	U.S. Department of the Interior	G-14
BLMWB	Bureau of Land Management Wildlife Biologist	G-18
BLMB	Bureau of Land Management Botanist	G-26
BLML	Bureau of Land Management, Lands	G-32
NOAA	National Oceanic and Atmospheric Administration, Fisheries	G-36
Caltrans	California Department of Transportation	G-44
RWQCB	North Coast Regional Water Quality Control Board	G-48
CAF&G	California Department of Fish and Game	G-52
NEC	Northcoast Environmental Center	G-56
BS	Bob Susavilla	G-60
CM	C. Munn	G-62
SQ	Stan Quail	G-68
MQ	Michael Quail	G-74
UNK	Unknown	G-76

G.3 PUBLIC HEARING (ORAL) COMMENTS AND RESPONSES

Public hearings were held at the Best Western Victorian Inn in Weaverville, California, on March 6, 2007, and at the La Quinta Inn in Redding, California, on March 7, 2007. The public hearing comments and responses begin on page G-91. No members of the public attended the hearing in Redding. A transcript of the Weaverville hearing is reproduced on left-hand pages, with individual comments delineated by sequentially numbered sidebars. Responses to the individual comments are provided on the facing right-hand pages; each response is denoted with the corresponding comment number. **Table G-2** lists the two people who commented.

TABLE G-2 Persons Who Provided Oral Comments

Comment ID	Person	Page No.
JF	Jim Frank	G-110 et seq.
MQ	Michael Quail	G-112 et seq.

G.4 CHANGES TO THE DRAFT EIS

In preparing the Final EIS, Western consulted with its cooperating agencies (principally the USFS and BLM) about the technical analyses in the Draft EIS and about each agency's requirements for its particular land areas and the specific mitigation measures that it would require for those lands. The result of the consultation was mainly that specific analyses, requirements, and mitigation measures were added in the Final EIS. Additional analyses covered proposed impacts of the project on the aquatic conservation strategy (ACS) for the region, a summary risk analysis of herbicide use that was done by the USFS, and an analysis of findings from the biological assessments done by Western that focused on the potential effects of the project on Coho salmon and the northern spotted owl. The ACS analysis is incorporated in section 3.2 of the Final EIS. The herbicide risk assessment summaries were added to appendix D of the Final EIS. The biological assessments are included in the Final EIS as appendix F. Also, the findings from the risk assessment summaries and the biological assessments are incorporated in the appropriate analyses in the main body of the Final EIS.

In the physical sciences area, consultation resulted in revisions, including more details in the descriptions of the affected environments in the sections on geology, soils, and hydrology resource areas and additional specific analyses of impacts in these areas. In the geology section, seismic hazards, faults, slope stability hazards, volcanic hazards, and special interest area sections were added. Environmental protection measures (EPMs), including soil erosion control measures for the project, roads, and staging areas, were also added. For the hydrology section, an additional analysis of cumulative watershed impacts was performed.

The Draft EIS also underwent a technical review as it was being prepared as a Final EIS. This review resulted in a number of additional specific analyses in the EIS, many of which also addressed areas covered in agency consultation. In addition, information was added in some places, while some discussions and tables were shortened to better focus the analysis and presentation. While this review was intended to improve the technical quality of the document, it did not result in any changes to the conclusions in the Draft EIS.

Changes were also made to the Draft EIS in response to public comments.

G.5 REFERENCES CALLED OUT IN THE COMMENTS AND RESPONSES

DOE (U.S. Department of Energy), 1997, *NEPA-EIS Checklist*.

USFWS (U.S. Fish and Wildlife Service), 2007, *Northwest Forest Plan and the Draft Recovery Plan for the Northern Spotted Owl* (*Strix occidentalis caurina*).

Western (Western Area Power Administration), 2007, *Integrated Vegetation Management Environmental Guidance Manual*, January.

WRITTEN COMMENTS AND RESPONSES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

March 30, 2007

Steve Tuggle
Natural Resources Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, California 95630-4710

Subject: Draft Environmental Impact Statement (DEIS) for the Trinity Public Utilities
District Direct Interconnection Project (CEQ# 70039)

Dear Mr. Tuggle:

The Environmental Protection Agency (EPA) has reviewed the DEIS referenced above. Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our review authority under Section 309 of the Clean Air Act.

This project is intended to improve system reliability by providing a shorter, new, direct interconnection with Western Area Power Administration (Western)'s transmission system at the Trinity Power Plant. The project involves removal of 5.3 miles of existing 12kV distribution line and construction of new 50kV transmission line on a 8.5 mile new right of way (ROW), and a new switchyard. The U.S. Forest Service, U.S. Bureau of Land Management, and U.S. Bureau of Reclamation participated as cooperating agencies, with the U.S. Department of Energy as the Lead Federal Agency. Four main system alternatives and 3 main routing alternatives were considered but only one alternative was analyzed in the DEIS, as it minimizes potential adverse impacts by using existing ROW, to the extent possible. We have rated this project as Lack of Objections (LO) (see enclosed *Summary of Rating Definitions*).

EPA strongly supports Western's adoption of the Environmental Protection Measures (Section 3.2) and the U.S. Forest Service Resource Management Plan Policies (Appendix E) identified in the DEIS. These protective measures are important because the project will permanently disturb 149.50 acres, including critical habitat for the coho salmon and the northern spotted owl. In addition, the existing access roads and transmission line ROW that would be used to construct the Proposed Project cross several streams that are governed by Riparian Reserve policies and Late Successional Reserves. EPA recommends that Western commit to these protection measures and policies in the Record of Decision.

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Response to EPA-1:

The EPA's rating of the Draft EIS is acknowledged. According to the EPA's rating definitions, "Lack of Objections" means that the "EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal."

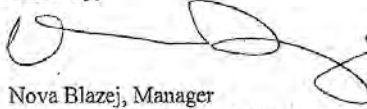
Response to EPA-2:

Western acknowledges EPA's support of Western's adoption of the Environmental Protection Measures identified in section 3.2 and the USFS Management Plan Policies in appendix E of the Draft EIS. Commitment to the mitigation measures and policies identified in this Final EIS would be included in the Record of Decision. A copy of the Final EIS will be sent to the address indicated in the comment.

EPA-2
Cont.

We appreciate the opportunity to review this DEIS. When the FEIS is released for public review, please send (1) copy to the address above (mailcode: CED-2). If you have any questions, please contact me at 415-972-3846 or Summer Allen, the lead reviewer for this project at 415-972-3847 or allen.summer@epa.gov.

Sincerely,



Nova Blazej, Manager
Environmental Review Office

Main ID # 4847

Enclosures: Summary of EPA's Rating Definitions

Cc: Carol Borgstrom, U.S. Dept. of Energy

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SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

75 HAWTHORNE STREET
SAN FRANCISCO, CALIFORNIA 94105-3901

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Sierra Tuggle
Natural Resources Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630-4710

956304710 0010

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United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
1111 Jackson Street, Suite 520
Oakland, California 94607

IN REPLY REFER TO:
ER# (ex. ER07/133)

Hardcopy

26 March 2007

Mr. Steve Tuggle, Natural Resources Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630-4710

Subject: ER 07/133; Review of Draft Environmental Impact Statement for the Trinity
Utilities District Direct Interconnection Project, Trinity County, CA

Dear Mr. Tuggle:

The Department of the Interior has received and reviewed the subject document and has no
comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPC
BLM, Regional Office

DOI-1

Response to DOI-1:

The U.S. Department of Interior's review, which resulted in no comments, is acknowledged.

(4/3/2007) Mark Wieringa - Fw: WAPA Trinity EIS comment

Page 1

From: <Howard_Matzat@ca.blm.gov>
To: <tuggle@wapa.gov>
Date: 3/28/2007 12:29 PM
Subject: Fw: WAPA Trinity EIS comment
Attachments: wapa trinity eis comments.doc

CC: <Steven_Anderson@ca.blm.gov>
comments on EIS
----- Forwarded by Howard Matzat/CASO/CA/BLM/DOI on 03/28/2007 11:26 AM

Gary Diridoni/CASO/CA/BLM/DOI
03/21/2007 02:24 PM

To
Howard Matzat/CASO/CA/BLM/DOI@BLM
cc
Chase Lentz/CASO/CA/BLM/DOI@BLM, Walter Herzog/CASO/CA/BLM/DOI@BLM, Eric
Ritter/CASO/CA/BLM/DOI@BLM
Subject
WAPA Trinity EIS comment

Attached for your reading pleasure.

Gary Diridoni
Redding BLM Wildlife Biologist
530-224-2184
gary_diridoni@ca.blm.gov

BLM Biology Comments
3/28/07

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BLMWB-1	1. Page 2-18, 3.2 Biological Resources Mitigation Measures. Statement begins with, "Terms and Conditions..." Include a statement that the necessary Reporting Requirements of the BO would be followed.
BLMWB-2	2. Page 2-19, 3.2 Biological Resources Mitigation Measures. "Vehicle operation off the ROW by shall be prohibited or limited to where roads already exist." Syntax error?
BLMWB-3	3. Page 2-19, 3.2 Biological Resources. Statement begins with, "Herbicides would be used..." Remove the following statement, "especially in Riparian Reserves". Regardless of where you are, herbicides will be applied in accordance with label requirements and the law.
BLMWB-4	4. Page 2-34 (Biological Resources, vegetation), 2-12 (Table 2-1), ES-7 (Biological Resources, vegetation), & 3.2-19 (Table 3.2-6) & potentially other locations. The numbers for disturbance activities do not add up. From 2-12; Total temporary disturbance is 50.35 acres and total permanent disturbance is 149.50 acres. From ES-7 and 2-34 the numbers are 3.63 and 6.34 respectively. Other sets of numbers are presented elsewhere. Please fix or explain the discrepancy between the numbers.
BLMWB-5	5. Page 3-1, 3.0 Affected Environment. In comparing the no action vs. the proposed action, I am left with the impression, the "no action" is only there due to the law as it is not completely analyzed/ not discussed at a comparable level of detail. What are the current actions and practises and what are their effects on the human environment.
BLMWB-6	What are the impacts and where is the discussion of the effects of herbicide treatments on the multiple resources present? Include specimen labels and MSDS for each herbicide proposed. The provided information included does not tell me the signal word, precautionary statement, mobility, solubility, toxicity to wildlife, environmental fate or hazards, etc. Where is this information presented, and analyzed?
BLMWB-7	'Significance' and 'impacts' are two words found in quantity in the entire section (3.x.x). Discuss the direct/indirect effects and remove any language that does not add to the discussion. (40 CFR 1502. 15 & 16). 'Standards of Significance' and 'less than significant impact, significant adverse, significant and unavoidable, and beneficial' is CEQA language, not NEPA language. Under NEPA, the significance of environmental impacts determines the need for the NEPA document; DNA, C(x), EA, EIS. Once that decision has been made, specific impacts are not categorized according to level of impact in an EIS. <u>Remove all CEQA language and ensure language is consistent with NEPA.</u> Scoping determines the issues to be addressed and identifies the significant issues related to the proposed action. The format the key biological issues, issues of environmental concern, etc.

Response to BLMWB-1:

The text in **table 2-2** on page 2-18 under 3.2, Biological Resources, was added to the Final EIS indicate that the reporting requirements of the Biological Opinion of the U.S. Fish and Wildlife Service would be followed.

Response to BLMWB-2:

The text on page 2-19 in **table 2-2** under 3.2, Biological Resources, was modified. It now reads “Vehicle operation off the ROW by *members of the public* shall be prohibited or limited to where roads already exist.”

Response to BLMWB-3:

The text on page 2-19 in **table 2-2** under 3.2, Biological Resources, was revised. The phrase “especially in Riparian Reserves” was removed.

Response to BLMWB-4:

The discrepancies in the disturbance acreages throughout the document were corrected or explained in response to the comment.

Response to BLMWB-5:

The discussion of the no action alternative was expanded in the Final EIS to provide a level of detail more comparable to that given for the proposed action.

Response to BLMWB-6:

Information on the toxicity of herbicides to wildlife and information on the bioaccumulative potential taken from material safety data sheets (MSDSs) are provided in appendix D of the DEIS. Additional discussions are provided in sections 3.2.2.2, 3.2.2.3, and 3.8.2.3 of the DEIS. Only those herbicides approved by the involved State and Federal agencies would be allowed to be used in the project area, and they would be used in accordance with the *Integrated Vegetation Management Environmental Guidance Manual* (Western 2007). Such use, with proper application, would not produce any substantive impacts. Therefore, the information provided in appendix D is considered to be sufficient to represent potential concerns about herbicide use. The listed bioaccumulative potential indicates a herbicide’s solubility and chemical stability and is thus an indicator of environmental fate and effects.

Response to BLMWB-7:

The method used for the DEIS to assess environmental effects — comparing the effects to standards of significance — is favored by Western and has been the conventional practice for many of Western’s environmental assessments. The method has the advantage of presenting to

BLMWB-7 (cont.)	are arranged and presented in the document are a CEQA requirements, not NEPA. Presenting in this format is unnecessary. <u>Remove all CEQA language and ensure language is consistent with NEPA.</u>
BLMWB-8	6. Page 3.2-3, Birds Spotted owl should be Northern spotted owl (<i>Strix occidentalis caurina</i>).
BLMWB-9	7. Page 3.2-4, Fisheries All historically accessible segments of creeks and rivers are considered critical habitat for coho salmon. If there are any other drainages that will be crossed that qualify they should be included.
BLMWB-10	8. Page 3.2-13, Table 3.2-5 Table 3.2-5 is incomplete, include the following species which can be found in Trinity County; Trinity Shoulderband (<i>Helminthoglypta talmadgei</i>) and Siskiyou Sideband (<i>Monadenia chaceana</i>).
See BLMWB-7	9. Page 3.2-16, 19, 20, 22, 23, 24, 27-29, 33 & 34, 35 (16) Remove the Standards of Significance
BLMWB-11	(19) Vegetation Statement, "The ROW would be managed to become a shrub or low tree cover type." In looking at the environmental consequences to the biological resources, I see no reference to how this will affect the resources. What will be the long term changes due to the habitat modifications that will occur along the corridor. What will be the effect of additional habitat fragmentation, increased predation, parasites?
BLMWB-12	(20) Blasting Statement, "However, blasting has a low probability of occurring." This statement does not change the affect or consequences of blasting and should be removed. In some cases won't impacts from blasting result to auditory damage or mortality from flying debris?
See BLMWB-4 See BLMWB-7	(22) Bald Eagle, "Based on the disturbance estimates table 3.2-8... disturbances... would total approximately 10 acres." Estimated disturbance acres from table 3.2-8 looks to be 0.160 acres. Numbers don't add up. For listed species, ESA and NEPA determinations are 'no effect' or 'may affect', not 'less than significant', see comment #5. 'Minimizing collisions' puts forward the notion that collisions will still occur resulting in take of a listed species.
BLMWB-13 Also see BLMWB-4	(23 & 24) NSO, Although Table 3.2-7 is specific to designated NSO habitats, we are presented yet another different number for disturbance acreage also in the text. What is, 'Designated NSO Habitats'? Is this Critical Habitat or does the Forest Service have a separate designation for NSO habitat?

Response to BLMWB-7 (cont.):

the public exactly what standards will be applied to measure effects, thereby giving the public the opportunity to agree or disagree or to suggest additional standards that are needed. This opportunity occurs before the EIS is completed, after which the public has fewer opportunities for participation. Regarding the use of the term “impacts,” item 1.6.1 under “Environmental Effects” in the *NEPA-EIS Checklist* (DOE 1997) directs one to “identify direct and indirect impacts.” The EIS uses standards of significance to identify such impacts.

Response to BLMWB-8:

The subspecies name of the northern spotted owl was added on the basis of information provided in the comment.

Response to BLMWB-9:

The text of section 3.2.1.1 dealing with critical habitat for the coho salmon was changed on the basis of information provided in the comment.

Response to BLMWB-10:

The Trinity sideband and the Siskiyou sideband were added to **table 3.2-5** on the basis of information provided in the comment.

Response to BLMWB-11:

The discussion of impacts from the proposed project on vegetation and wildlife as a result of managing the ROW as a shrub or as a low-tree-cover-type ROW was expanded in section 3.2.2.3 of the Final EIS.

Response to BLMWB-12:

The text dealing with blasting impacts on wildlife in section 3.2.2.3 was changed on the basis of concerns expressed in the comment.

Response to BLMWB-13:

Table 3.2-7 and the text dealing with impacts on the northern spotted owl in section 3.2.2.3 were changed to clarify the concerns expressed in the comment.

BLMWB-14	The statement on 3.2-24 that reads, ' In addition, it has been determined that, in the Pacific Northwest...of the northern spotted owl.' The references and statement is specific to the Pacific fisher and it is incorrect for it to be used in this context. It needs to be removed.
See BLMWB-4	Designated Critical Habitat acres loss or conversion of 28 acres. These acres should be included into the vegetation disturbance acres.
See BLMWB-7	(27) Low water crossing last sentence has CEQA language. Remove. (28) Pacific fisher-This is the correct usage of the above statement located on 3.2-24 Northern Goshawk- remove CEQA language
See BLMWB-7	(29) Foothill Yellow-legged frog. Remove CEQA language.
See BLMWB-7	(33-35) Survey and Manage / Aquatic Conservation Strategy (Riparian Reserves). Remove CEQA language. Refer to the ACS, S&G page C-37, LH4. Need to be consistent with the provided language and explain how the action will not prevent the attainment of ACS objectives. The most pertinent section reads, " Adjust existing leases, permits, ROW, and easements to eliminate adverse effects that retard or prevent the attainment of ACS objectives. If adjustments are not effective, eliminate the activity." Refer to S&G page B-11 for the ACS objectives.
BLMWB-15	Noxious Weeds. Acres of disturbance? What will be the effects and consequences of vegetation management and herbicide application to the environment and associated resource values. Remove CEQA language.
See BLMWB-7	Waters. Remove CEQA language
See BLMWB-5	(35) 3.2.2.4 Impacts from the No Action Alternative. This is very, very weak. Where is the discussion and what kind of environmental effects could occur from this alternative?
See BLMWB-7	3.5-7, 9, 10; 3.6-9, 3.3-8, 3.12-9 & 4.4-14-16 Remove the Standards of Significance and other CEQA language.
BLMWB-16	Page 3.12-1 Water Resources. "Wash" is typically a desert term and NWFP makes no reference to 'washes'. Use ephemeral creeks or refer to it as dry creek crossings to remain consistent. Provide consistency with ACS objectives.
BLMWB-17	Page 3.12-14 Text reads, "More woody vegetation found at ravine crossings would be retained due to higher conductor clearance." There is no quantifiable way to measure this. Suggested wording, "Woody vegetation that does not compromise reliability standards found at ravine crossings would be retained due to higher conductor clearance."
BLMWB-18	Page D-1 Appendix D. Many of the herbicides on the list are not approved for use on BLM. Suggest a list of potential herbicides by landowner to remove confusion onto which lands herbicides would be used.

Response to BLMWB-14:

The statement was deleted on the basis of information presented in the comment.

Response to BLMWB-15:

On the basis of concerns expressed in the comment, the discussion of impacts related to the Survey and Manage/Aquatic Conservation Strategy in section 3.2.2.3 was modified in the Final EIS to be consistent with the Aquatic Conservation Strategy objectives.

Response to BLMWB-16:

The terminology used for nonperennial streams was changed on the basis of information presented in the comment.

Response to BLMWB-17:

The text was revised on the basis of the suggestion provided in the comment.

Response to BLMWB-18:

Text was added in section 3.8.2.3 of the Final EIS to indicate that not all herbicides listed in appendix D have been approved by all Federal landowners and that only those approved by a given landowner would be used on the landowner's land.

(4/3/2007) Mark Wieringa - Fw: Trinity EIS Comments

Page 1

From: <Howard_Matzat@ca.blm.gov>
To: <tuggle@wapa.gov>
Date: 3/28/2007 12:32 PM
Subject: Fw: Trinity EIS Comments
Attachments: Trinity EIS Comments.doc

BLM Biology Comments
3/28/07

CC: <Steven_Anderson@ca.blm.gov>
EIS comments
----- Forwarded by Howard Matzat/CASO/CA/BLM/DOI on 03/28/2007 11:30 AM

Chase Lentz/CASO/CA/BLM/DOI
03/27/2007 03:54 PM

To
Howard Matzat/CASO/CA/BLM/DOI@BLM
cc
Gary Diridoni/CASO/CA/BLM/DOI@BLM, Eric Ritter/CASO/CA/BLM/DOI@BLM, Walter
Herzog/CASO/CA/BLM/DOI@BLM
Subject
Trinity EIS Comments

Chase Lentz, Botanist
Bureau of Land Management
Redding Field Office
355 Hemsted Drive
Redding, CA 96002
(530) 224-2130

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BLMB-1	Page 2-17 2.5 Proposed Project Operation and Maintenance Last point of maintenance activities stating with “Noxious weeds would be” Herbicide application would be in accordance with Western’s Integrated Vegetation Management Environmental Guidance Manual (Western 2003)” add “and land management agency requirements.”
BLMB-2	Page 2-19 Table 2-2. Proposed Project Mitigation Measures 3.2 Biological Resource “Vegetation would be controlled or removed in accordance with Western’s Integrated Vegetation Management Environmental Guidance Manual (Western 2003)” add “and land management agency requirements.”
BLMB-3	Page 2-29 2.6.4 Bureau of Land Management Environmental Protection Measures Stipulation 4 “As applicable, vegetation removal towers/pole locations (25 feet) should not exceed 200 percent of the NERC Standard FAC-003-1 Clearance 1 requirement (R.1.2.1). Vegetation clearing/trimming methods and distances would be consistent with the legislated mandatory reliability standards and Western’s Vegetation Management Manual (2006). Where feasible, outside of the tower or pole clearing areas, mature bush species should be thinned a maximum distance of 30 feet between main stems. If greater clearance distances are needed, Western would need to consult with BLM on any proposed modifications to the mitigation measures, to ensure that the desired mitigative effects are still achieved and the applicable laws and regulations are complied with” Change to, “Vegetation removal around towers/pole locations (25 feet) will not exceed 200 percent of the NERC Standard FAC-003-1 Clearance 1 requirement (R.1.2.1). Vegetation clearing/trimming methods and distances would be consistent with the legislated mandatory reliability standards, Western’s Vegetation Management Manual (2006), and BLM requirements. Where feasible, outside of the tower or pole clearing areas, mature <u>shrub</u> species <u>may</u> be thinned a maximum distance of 30 feet between main stems. If greater clearance distances are needed, Western would need to consult with BLM on any proposed modifications to the mitigation measures, to ensure that the desired mitigative effects are still achieved and the applicable laws and regulations are complied with”
BLMB-4	Stipulation 6 “Riparian vegetation can be left in the ROW as long as it doesn’t compromise mandatory reliability standards or conflict with Western’s Integrated Vegetation Management Environmental Guidance Manual (Western 2003).”

Response to BLMB-1:

The text was modified on the basis of the suggestion provided in the comment.

Response to BLMB-2:

The text was modified on the basis of the suggestion provided in the comment.

Response to BLMB-3:

The text was modified on the basis of the suggestion provided in the comment.

Response to BLMB-4:

The text was modified on the basis of the suggestion provided in the comment.

BLMB-4 (cont.)	Replace “can be” with “will be”, and remove “or conflict with Western’s Integrated Vegetation Management Environmental Guidance Manual (Western 2003).” New sentence should read, “Riparian vegetation will be left in the ROW as long as it doesn’t compromise mandatory reliability standards.”
BLMB-5	Stipulation 10 “Vegetation located in deep draws or canyons should not be removed or trimmed unless they encroach into the legal mandatory reliability standards and consistent with Western’s Vegetation Management Manual (2006).” Replace “should not be” with “will not be”, and remove “and consistent with Western’s Vegetation Management Manual (2006).” New sentence should read. “Vegetation located in deep draws or canyons will not be removed or trimmed unless they encroach into the legal mandatory reliability standards.”
BLMB-6	Page 3.2-11 Sensitive Fungi Species “orange-peel fungus (<i>Aleuria aurantia</i>).” should be “stalked orange-peel fungus (<i>Sowerbyella rhenana</i>).” The species name for the stalked orange-peel fungus is <i>Sowerbyella rhenana</i> (formerly <i>Aleuria rhenana</i>).
BLMB-7	Page 3.2-17 3.2.2.2 Environmental Protection Measures “Vegetation would be controlled or removed in accordance with Western’s Integrated Vegetation Management Environmental Guidance Manual (Western 2003)” add “and land management agency requirements.”
BLMB-8	Page 3.2-29 Sensitive Fungi “orange-peel fungus” should be “stalked orange-peel fungus.” The species name for the stalked orange-peel fungus is <i>Sowerbyella rhenana</i> (formerly <i>Aleuria rhenana</i>).
BLMB-9	Appendix C Species would be easier to locate if they were sorted by scientific name instead of common name.

Response to BLMB-5:

The text was modified on the basis of the suggestion provided in the comment.

Response to BLMB-6:

The names for the fungi species were corrected on the basis of the information presented in the comment.

Response to BLMB-7:

The text was modified on the basis of the suggestion provided in the comment.

Response to BLMB-8:

The names for the fungi species were corrected on the basis of the information presented in the comment.

Response to BLMB-9:

The species have been reorganized by alphabetical listing by scientific name in appendix C.

BLMB-10

Page C-2
Fungi and Lichens

Branched collybia should be *Collybia racemosa* not *Dendrocollybia racemosa*

Also, the BLM sensitive species below are not in the Appendix C

BLMB-11

SCI_NAME	COM_NAME	CNPS LIST	QUADS	NATCOMS
Silene salmonacea	Klamath Mountain catchfly	1B.2	Rush Creek Lakes, Trinity Dam	Lower montane coniferous forest/serpentine, openings
Penstemon tracyi	Tracy's beardtongue	1B.3	Rush Creek Lakes	Upper montane coniferous forest(rocky)

Response to BLMB-10:

The scientific name for the branched collybia was corrected on the basis of information presented in the comment.

Response to BLMB-11:

The Klamath Mountain catchfly and Tracy's beardtongue were added to appendix C on the basis of information provided in the comment.

BLM Lands Comments
3/29/07

Comments from Lands
Trinity County WAPA EIS

BLML-1	Page 1-6 Table 1-1 Instead of easement it should read right-of-way and should reference 2800 instead of 1701.
BLML-2	Page 2-29 2.6.4 2 nd to the last paragraph erosion stip presently reads ... ROW holder shall monitor access routes along utility lines... it should read ... ROW holder shall monitor the ROW and access routes along utility lines...
BLML-3	Page 3.5-5 last sentence presently reads ... closed but could become active upon payment of assessment. It should read ... closed but could become active upon relocation.

Response to BLML-1:

The changes to **table 1-1** recommended in the comment were made in the FEIS.

Response to BLML-2:

The changes on page 2-29 recommended in the comment were made in the FEIS.

Response to BLML-3:

The changes on page 3-5 recommended in the comment were made in the FEIS.

(4/2/2007) TrinityEIS EIS - Attn: Steve Tuggle

Page 1

From: rick rogers <rick.rogers@noaa.gov>
To: <trinityeis@wapa.gov>
Date: 3/29/2007 6:34 PM
Subject: Attn: Steve Tuggle
Attachments: WAPA DEIS comment letter.PDF

CC: Cristi Reid <Cristi.Reid@noaa.gov>

Hi Steve,
I would like to submit to WAPA the attached .pdf file representing NOAA Fisheries' comments on the DEIS for the Trinity Public Utility District Direct Interconnection Project. The original signed copy will be mailed tomorrow. If you have any questions or concerns, please contact me at 707-825-5167.

thanks,

Rick Rogers

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 Southwest Region Arcata Area Office
 1655 Heindon Road
 Arcata, California 95521
 Tel (707) 825-5163; Fax (707) 825-4840

MAR 23 2007

In response refer to:
 2007/01961

Mr. Steve Tuggle
 Natural Resources Manager, N1400
 Western Area Power Administration
 Sierra Nevada Region
 114 Parkshore Drive
 Folsom, California 95630-4710

Dear Mr. Tuggle:

This letter transmits NOAA's National Marine Fisheries Service's (NMFS) comments regarding Western Area Power Administration's (WAPA) draft Environmental Impact Statement (EIS) for the Trinity Public Utilities District Direct Interconnection Project (Project). The Project entails removal of approximately 5.3 miles of 12-kilovolt (kV) distribution line, and the construction and operation of approximately 16 miles of new 60-kV transmission line, a tap structure and associated equipment, and a new switchyard. The Project will occur predominantly on Federal land adjacent to the upper Trinity River and near the towns of Lewiston and Weaverville, Trinity County, California. NMFS has reviewed the draft EIS, and offers the following comments.

General Comments

The Project involves the installation of new power poles and distribution lines through several tributary watersheds below Lewiston Dam that contain Federally threatened Southern Oregon/Northern California Coast coho salmon (*Oncorhynchus kisutch*) and its designated critical habitat, most notably Rush Creek and Little Browns Creek. Many of the upper Trinity River tributaries suffer from excessive sediment loading caused primarily by road-related erosion. All of the power poles installed as part of the Project will be located away from existing stream channels, which will minimize construction-related discharge of sediment into coho salmon habitat. However, the Project will have to utilize existing roads and stream crossings to access the new power-pole locations, and short sections of new road and stream crossings will be constructed to access locations inaccessible via the current road network. Construction and use of stream crossings and new road segments can potentially introduce fine sediment into nearby water courses, which can simplify instream habitat, raise instream turbidity levels, and physiologically harm coho salmon. Although WAPA has proposed Mitigation Measures meant to minimize sediment-related effects arising from Project activities, NMFS remains concerned about potential sediment-related impacts pending future review of the specific Project details.

NOAA-1

NOAA 2



Response to NOAA-1:

The use of existing roads and stream crossings and the construction of new road sections and stream crossings are accurately described in the comment.

Response to NOAA-2:

The Final EIS identifies general mitigation measures that, when implemented, would limit the impacts from releases of fine sediment from access roads on watercourses to less than significant levels. Specific mitigations at locations on access and construction roads would be identified in a project transportation plan, which would be issued prior to construction. Western would work with the various landowners and the California Regional Water Quality Control Board, North Coast Region, to identify the specific mitigations to be included in the plan.

NOAA-3

Specific Comment

Page 3.2-4: NMFS points out that the impassable culvert within Little Browns Creek (County Road 232 at the Roundy Road Crossing) is currently funded for replacement during summer 2007. Once completed, the new bridge crossing will allow anadromous fish passage into 3 miles of high quality stream habitat above the current crossing.

NMFS appreciates the opportunity to comment on WAPA's draft EIS for the Trinity Public Utilities District Direct Interconnection Project. Please contact Mr. Rick Rogers at (707) 825-5167, or via e-mail at rick.rogers@noaa.gov, if you have any questions concerning this letter or require additional information.

Sincerely,



For Inna Lagomarsino
Arcata Area Office Supervisor

cc: C. Reid, NOAA Program Planning and Integration
Copy to file –ARN #150308SWR2007AR00135

Response to NOAA-3:

The text on page 3.2-4 of the DEIS was modified to note that access to new, high-quality stream habitat will be afforded to anadromous fish by the new bridge crossing, as described in the comment.



Arnold Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Cynthia Bryant
Director

April 3, 2007

Mark Wieringa
U.S. Department of Energy
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Subject: Trinity Public Utilities District Direct Interconnection Project
SCH#: 2007022066

Dear Mark Wieringa:

The State Clearinghouse submitted the above named Draft EIS to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on April 2, 2007, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

A handwritten signature in cursive script that reads "Terry Roberts".

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

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**Document Details Report
State Clearinghouse Data Base**

SCH# 2007022066
Project Title Trinity Public Utilities District Direct Interconnection Project
Lead Agency U.S. Department of Energy

Type EIS Draft EIS
Description Approximately 16 miles of 60-kV transmission line from Trinity Dam to Lewiston Dam, spur to Lewiston Substation, and on to a new 50 x 110' Weaverville Switchyard south of Weaverville and east of Highway 299. Removal of 5.3 miles of 12-kV distribution line in Shasta-Trinity NF and reuse of right-of-way. Three-way tap structure west of Lewiston Dam. Approximately 2 miles of construction-access roads would be built, and some existing roads improved where needed.

Lead Agency Contact

Name Mark Wieringa
Agency U.S. Department of Energy
Phone (720) 962-7448 **Fax**
email
Address Western Area Power Administration
P.O. Box 281213
City Lakewood **State** CO **Zip** 80228-8213

Project Location

County Trinity
City
Region
Cross Streets Crosses Trinity Dam Boulevard, Browns Mtn. Road
Parcel No.
Township 33,34N **Range** 8W, 9W **Section** **Base** MD

Proximity to:

Highways 299, 3
Airports
Railways
Waterways Trinity River - 2 crossings
Schools
Land Use General Plan, Trinity Co. for private land (little involved) USFS Land & Resource Mgt. Plan, Shasta-Trinity NF. Redding Resource Mgt. Plan, BLM. Reclamation Manual, BOR.

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Economics/Jobs; Fiscal Impacts; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Regional Water Quality Control Board, Region 1; Department of Parks and Recreation; Native American Heritage Commission; Public Utilities Commission; Department of Forestry and Fire Protection; Department of Fish and Game, Region 1; California Energy Commission; Department of Water Resources; California Highway Patrol; Caltrans, District 2; Department of Toxic Substances Control; State Lands Commission

Date Received 02/13/2007 **Start of Review** 02/14/2007 **End of Review** 04/02/2007

Note: Blanks in data fields result from insufficient information provided by lead agency.

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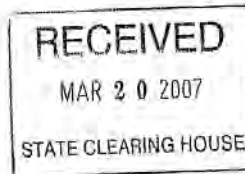
MAR-20-2007 TUE 08:28 AM CALTRANS

FAX NO. 530 225 3578

P. 01/01

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF COMMUNITY PLANNING
1657 RIVERSIDE DRIVE
P. O. BOX 496073
REDDING, CA 96049-6073
PHONE (530) 229-0517
FAX (530) 225-3578
TTY (530) 225-2019



*Flex your power!
Be energy efficient!*

March 20, 2007

Mr. Steve Tuggle
Natural Resources Manager, N1400
Western Area Power Administration
114 Parkshore Drive
Folsom, CA 95630-4710

IGR/CEQA Review
Tri-299-54.4
Trinity PUD
Direct Interconnect Project
EIS
SCH# 2007022066

Dear Mr. Tuggle:

The California Department of Transportation (Caltrans) has reviewed the Draft Environmental Impact Statement (DEIS) submitted on behalf of the Trinity Public Utility District, for the Direct Interconnect Project. The project is located in Trinity County near the communities of Lewiston and Weaverville.

The power line extension project is located away from the State Highway. As stated in the document, none of the segments cross the State Highways. The project would result in timber harvesting activities. The amount of harvesting proposed is not a significant increase and is typical of this area. Lumber trucks would access the highways from established road connections.

The Weaverville Switchyard is accessed from State Route 299. As identified in the document, a Caltrans encroachment permit is required to address access to that facility. For more information regarding encroachment permit fees or the encroachment permit process, the applicant may contact the District 2 Permits Office located at 1657 Riverside Drive in Redding. The telephone number is (530) 225-3400. Encroachment permit applications are also available from the Caltrans website at www.dot.ca.gov.

Thank you for the opportunity to provide comments on the proposed project. If you have any questions, please call me at 225-3369.

Sincerely,

A handwritten signature in dark ink, appearing to read "Marcelino".

MARCELINO GONZALEZ
Local Development Review
District 2

"Caltrans improves mobility across California"

Response to Caltrans-1:

Impacts of the proposed project on traffic and transportation, including those from logging activities, are assessed in section 3.10 of the EIS. As noted in that section, such impacts are expected to be minor.

Response to Caltrans-2:

The requirement for a Caltrans encroachment permit for access to the Weaverville Switchyard is noted in the DEIS on page 3.10-13.

(4/2/2007) TrinityEIS EIS - Comments on Draft EIS for Trinity Public Utilities District Direct Interconnection Project

Page 1

From: "Fred Blatt" <FBlatt@waterboards.ca.gov>
To: <trinityeis@wapa.gov>
Date: 3/23/2007 1:05 PM
Subject: Comments on Draft EIS for Trinity Public Utilities District Direct Interconnection Project
Attachments: 032307_JLS_Trinity_Public_Uilities_District_Direct_Interconnection_Project_CEQA_COMMENT.pdf

CC: "John Short" <JShort@waterboards.ca.gov>
To Whom it May Concern,

Attached you will find our comments on the Draft EIS for Trinity Public Utilities District Direct Interconnection Project, Trinity County, California. A hard copy is being sent out in today's mail.

If you have any questions regarding our comments, please contact John Short of our office at (707) 576-2065.

Thank you,
Fred Blatt

Fred Blatt
Senior Environmental Scientist
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Phone (707) 576-2800
Main Fax (707) 523-0135
Timber Fax (805) 788-3579

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Linda S. Adams
Secretary for
Environmental Protection

**California Regional Water Quality Control Board
North Coast Region**

John W. Corbett, Chairman

www.waterboards.ca.gov/northcoast
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone: (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135



Arnold
Schwarzenegger
Governor

March 23, 2007

Mr. Steve Tuggle
Natural Resource Manager, N1400
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Dr.
Folsom, CA 95630-4710

Subject: Comments on the Draft Environmental Impact Statement (EIS) for the
Trinity Public Utilities District Direct Interconnection Project
File: USFS

Dear Mr. Tuggle:

Thank you for the opportunity to comment on the above-referenced document. As the California state agency responsible for the protection of state waters in this area, we are concerned that the project may result in impacts to water quality. The document identifies many mitigation measures that would minimize or avoid such impacts. We strongly recommend that all mitigation measures related to the protection of water quality and preservation of the integrity of stream and wetlands be included in the project design and construction specifications. The following addresses our specific concerns regarding the project:

1. Erosion and sediment control – We understand that the project will result in new land disturbance associated with roadways and utility line right-of-way (ROW), including the clearing of timber and brush and some new road construction. In addition, the project would utilize some existing ROW containing roadways or other disturbed areas. Please be aware that the Trinity River watershed below Lewiston Dam is listed as impaired by excessive sediment pursuant to Section 303(d) of the Federal Clean Water Act. Sediment from dirt roads is considered one of the primary causes of this impairment. The EIR commits to obtaining permit coverage under the statewide General Permit for Storm Water Discharges from Construction Activity (General Permit). Under provisions of this permit, temporary and permanent erosion and sediment control measures will be required for areas of new construction. We would also request that the project proponent implement similar erosion and sediment control measures for areas of existing disturbance that are located within the project area. Western Area Power Administration previously spoke with Fred Blatt in our office regarding

California Environmental Protection Agency

Recycled Paper

RWQCB-1

RWQCB-2

Response to RWQCB-1:

The Regional Water Quality Board's recommendation is noted. All relevant mitigation measures would be included in the project design and construction specifications. Both the ROW clearing specifications and the project construction specifications would reference the EIS and Mitigation Action Plan and thereby include, by reference, the mitigation measures identified in those documents.

Response to RWQCB-2:

The impaired status of the Trinity River watershed is noted on page 3.12-5 of the Draft EIS, and the need to obtain a General Permit from the RWQCB for new construction under the NPDES Stormwater Program is noted on page 3.12-12 of the Draft EIS. Western would implement erosion control measures similar to those required under the General Permit on all existing, improved, and new access roads and construction areas employed to construct and operate the project.

Mr. Tuggle

-2-

March 23, 2007

RWQCB-2
(cont.)

permitting for timber harvesting and brush clearing associated with the proposed project. We have determined that the timber and brush clearing activities can be addressed through the General Permit.

RWQCB-3

2. Dredge/fill activities within waters of the state – The EIS discloses that the project will require numerous crossings of “dry washes” or other waters of the state. Please be aware that under provisions of the California Water Code, permits are required for activities that would result in discharges or threatened discharges of waste (including sediment) to waters of the state. Specifically, fill or excavation within waters of the state (including wetlands, ephemeral or intermittent streams) requires permitting from this agency. In the case where these waterbodies are also considered waters of the US, such a permit would serve as water quality certification pursuant to Section 401 of the Clean Water Act.

RWQCB-4

3. Roads located on decomposed granite soils – Significant portions of the project area are located in watersheds containing decomposed granite which is commonly known to be highly unstable and erosive and easily transported to watercourses in runoff during rainfall events to the detriment of the beneficial uses of water. Millions of dollars have been spent in the adjacent Grass Valley Creek watershed to reduce the effects of decomposed granite sediment on streams in the area, as well as the Trinity River. Additionally, the Trinity River watershed below Lewiston Dam is listed as sediment impaired under Section 303(d) of the Clean Water Act and contains anadromous salmonids listed as threatened or endangered under the Federal Endangered Species Act (ESA). For these reasons, we recommend adding language to the Final EIS specifying that access roads in the decomposed granite portions of the project area shall be rocked with clean gravel, along with the other control measures being implemented to prevent the discharge of sediment to nearby watercourses.

If you have any questions or comments please contact me at (707) 576-2065.

Sincerely,



John L. Short
Senior Water Resource Control Engineer

032307_JLS_Trinity_Public_Uilities_District_Direct_Interconnection_Project_CEQA_COMMENT.doc

California Environmental Protection Agency

Recycled Paper

Response to RWQCB-3:

Text noting the need for a permit from RWQCB under the California Water Code for activities that would or could cause sediment discharges to waters of the State was added to page 3-12.12 of the DEIS under the heading “Discharge of Contaminants or Sediments.” The corresponding CWA Section 401 Federal requirements for waters of the United States are noted on pages 3-12.4 and 3-12-6 of the DEIS.

Response to RWQCB-4:

A statement about an environmental protection measure, in which roads composed of granite soils that are used to construct the project and are located in areas in which releases of fine sediment could affect nearby water courses would be rocked with clean gravel, was added to section 3.12.2.2 and to **table 2-2** of the DEIS.

DFG Message

From: TrinityEIS EIS
To: Norton, Brandy
Date: 2/28/2007 9:37 AM
Subject: Re: Trinity Public Utilities District Direct Interconnection Project, Draft EIS

CC: Bridges, John; Schriener, Misti Kae
Brandy:

Thanks for your message. We will continue to keep you informed about the project, especially if anything changes.

Mark

>>> "Brandy Norton" <BNORTON@dfg.ca.gov> 2/23/2007 2:24 PM >>>
Trinity PUD EIS Team,

I have reviewed the Draft Environmental Impact Statement (DEIS) for the Trinity Public Utilities District Direct Interconnection Project, in Trinity County. The project is proposing to construct, own, operate and maintain approximately 16 miles of 60-kilovolt transmission line, associated access roads, a new switchboard, and interconnection facilities.

The Department of Fish and Game has determined that the project, with proper implementation of the proposed mitigation measures is not likely to result in take of a State listed species or species of special concern or cause significant impacts to biological resources. If the project changes, or if stated mitigation measures can not be implemented, please contact us so that potential impacts to sensitive species may be re-evaluated.

Please let me know if you have any questions regarding this determination.

Thank you,
Brandy Norton

Brandy Norton, Biologist
Habitat Conservation Planning
California Department of Fish and Game
601 Locust Street
Redding, CA 96001
530-225-2349
Cell: 530-510-1858
Fax: 530-225-2343

CAF&G-1

Response to CAF&G-1:

The comment from the California Department of Fish and Game noting that the proposed project is not likely to result in a take of a State listed species or species of special concern is acknowledged.



February 14, 2007

Steve Tuggle
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

Dear Mr. Tuggle,

Please send, ASAP, all applicable and current documents, including EIR/EIS, regarding **the new power lines requested by the Trinity County Public Utilities District**, to my office so that the Northcoast Environmental Center may adequately review this initiative.

Sincerely,



Greg King
Executive Director

575 H STREET ~ ARCATA, CA 95521
(707) 822-6918 ~ Fax (707) 822-0827 ~ email: nec@yournec.org
www.yournec.org

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March 26, 2006

Mr. Steve Tuggle, Natural Resources Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630-4710

Comments on DOE/EIS-0389: Trinity Public Utilities District Interconnection Project

The Northcoast Environmental Center (NEC) is a non-profit 501(c)3 organization based in Arcata, California. For nearly 40 years the NEC has addressed watershed and habitat issues throughout the North Coast of California. Of particular concern has been the biological health of the Klamath River basin, including the Trinity River and its environs.

NEC-1

There seems little justification for constructing 16 miles of new 60-kV power lines from Trinity Power Plant to the Weaverville Switchyard. The stated objective — “to enhance the reliability of service for the customers of Trinity PUD [who] routinely experience nearly 20,000 consumer hours in outages per year” — is in no way addressed by the proposed project, as the power lines will pass through nearly 16 miles of forest whose trees, according to the DEIS, will generally stand higher than the power lines. In this area the greatest threat to power lines is falling trees. Despite an exorbitantly large proposed 80-foot right-of-way for the project, the new lines will be just as much at risk of failing as the old lines.

NEC-2

Given the obvious conclusion that new power lines strung through a forest are just as much at risk as old power lines through a forest, what, really, is the “need” for this project? Why is there a “need” to increase the capacity of the power lines from 12 kV to 60 kV? Could it be to **accommodate development and growth in the Weaverville area?** This potential is compelling enough that it would need to be addressed in the cumulative effects evaluation of state and federal laws (NEPA and CEQA); that is, what are the anticipated future developments that may be associated with this powerline project? The absence of such consideration brings the DEIS into non-compliance with CEQA and NEPA.

575 H STREET ~ ARCATA, CA 95521
(707) 822-6918 ~ Fax (707) 822-0827 ~ email: nec@youmec.org
www.youmec.org

Response to NEC-1:

While the proposed new line would be subject to outages caused by storms and falling trees, reliability would be increased over that of the existing line because the direct route of the project would be much shorter than the current path of power delivery over lines operated by Pacific Gas and Electric (PG&E). In addition, the response to outages from Western and Trinity PUD maintenance crews would be much faster than that from PG&E's crews, owing to the closer proximity of Trinity PUD's maintenance facility located in Weaverville to the service area. The 80-foot right-of-way width, which is described as "exorbitant" in the comment, is, in fact, necessary to maintain the reliability of the line. The EIS, moreover, analyzes the impacts of constructing and maintaining the ROW, including measures affecting reliability, such as maintaining the ROW and removing danger trees. Impacts from these activities would be minor. No changes to the DEIS resulted from this comment.

Response to NEC-2:

The project would not increase the capacity of the power lines from 12 kV to 60 kV, as stated in the comment. The 12-kV line that the comment is referring to does not supply power to the service region in question. This line is not currently energized, and it could not bring power to the service area. The project would simply use and expand the existing 20-foot ROW for the inactive 12-kV line to reduce the impacts from constructing the proposed line. The proposed project would serve the same load that is currently being served over existing PG&E lines. Trinity PUD has load growth responsibility under State law, whereas Western does not have load growth responsibility. Thus, electrical service would have to respond to growth. Limiting power supply to regulate growth would not be a legal option. Thus, power capacity is not relevant to the development/growth discussion.

Increased reliability of power delivery resulting from the project, on the other hand, could conceivably facilitate growth through improved electrical service. However, as for growth inducement, various other economic and demographic factors would have to be favorable to drive growth in the area. These factors are generally not present in the service area, while electrical reliability has not been identified as a barrier to growth. Thus, it is unlikely that improved electricity reliability would contribute to significant growth in the area. The text in sections 4.1.9 and 4.5 has been revised to add a discussion on this issue, which reflects this comment response. Other parts of Section 4.1, Cumulative Impacts, have been expanded to more thoroughly examine and better quantify cumulative impacts. However, the conclusion that the cumulative impacts of the project would be less than significant has not changed as a result of this expanded analysis.

NEC-3	The DEIS states, “The No Action Alternative appears to have the fewest overall impacts; however, it does not meet Western’s need for power system reliability.” Again, given the high winds and predictable snows in the proposed power line route, which is almost completely enshrouded by trees taller than the proposed lines themselves, “reliability” is an elusive goal, at best.
NEC-4	Under “Alternatives Analysis,” the DEIS states, “The system and routing alternatives described above were not considered in detail for this EIS because the Proposed Project upgrades and/or rebuilds of the existing transmission lines within the existing ROW would minimize potential adverse effects compared to constructing new lines in previously undisturbed areas.” Yet construction of “new lines in previously undisturbed areas” is the prescription for more than half of the project. Even were it true that the upgrades and/or rebuilds “would minimize potential adverse effects compared to constructing new lines in previously undisturbed areas,” this can not be said for the rest of the project, whose foreseeable cumulative impacts on water quality, soils, wildlife, fisheries, aesthetics, natural resources, noise, EMFs and many other qualities have been dramatically understated in the DEIS. In addition, the upgrades and rebuilds within the existing corridor will amount to new line construction, given the amount of ground disturbance, and the size of the ROW, that will be required.
NEC-5	Northern Spotted Owl It is dubious at best to consider conserving and managing “acreage off-site to mitigate the loss of NSO habitat” that would occur under this project. Designating 28 acres as “Critical Habitat” is an illusory safeguard, and illegal under NEPA. Northern spotted owls are not afforded protection in the EIS as mandated under state and federal laws, including the state and federal Endangered Species Acts, NEPA and CEQA. Also at issue is lack of compliance with the Northwest Forest Plan, and the Interconnection Project’s failure to address the ongoing Spotted Owl Recovery Plan.
NEC-6	Timber Sales Creation of Timber Sales to accommodate the project on BLM and USFS lands should be completed prior to adoption of the DEIS. Information on timber sales is essential for determining this project’s compliance with state and federal laws.

Sincerely,



Greg King
Executive Director

Response to NEC-3:

Please see the response to Comment NEC-1.

Response to NEC-4:

The statement in the comment to the effect that more than half of the project would be built in previously undisturbed areas is not accurate. The proposed route of the Segment 3 of the project would not be considered to be in an undisturbed area. Rather, it would be in areas managed for logging and that have been previously logged, while the route would closely follow an existing main logging road. Similarly, the proposed upgrading and widening of the ROW for the existing 12-kV line for Segment 1 would not have the same impacts as construction in previously undisturbed areas or in areas without an existing ROW. For example, visual impacts would be reduced by using an existing ROW, while land disturbance for the proposed 80-foot ROW would be reduced up to 25% by using the existing 20-foot ROW for this portion of the line. In fact, a major consideration in selecting the existing 20-foot ROW for the proposed route was specifically to reduce environmental impacts. Regarding the analysis of cumulative impacts in the Draft EIS, please see the response to comment NEC-2.

Response to NCE-5:

The impact discussion on critical habitat for the northern spotted owl in section 3.2.2.3 states that there would be a loss or conversion of 35.4 acres of critical habitat. The text then states that off-site conservation or management of areas would be necessary to mitigate this impact. The amount and type of mitigation would be determined in conjunction with the U.S. Fish and Wildlife Service, at the conclusion of ongoing section 7 consultation. Required mitigation would be consistent with the *Northwest Forest Plan and the Draft Recovery Plan for the Northern Spotted Owl* (*Strix occidentalis caurina*) (USFWS 2007).

Response to NEC-6:

The impacts from logging associated with the proposed project are incorporated and thoroughly analyzed in the DEIS. It is not necessary for timber sales to be completed for the associated impacts to be assessed.

FEB. 14

AIR ROUTING	
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N0000	
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Library/Recycle	
F/Code	

SUBJECT:
PROPOSAL, 16 MILES OF 60KV LINE

I HAVE NOTHING BUT POSITIVE COMMENTS, FOR
YOUR PROJECT. FUNDING HAS BEEN APPROVED, SO
ADVERTISE FOR BIDS, MAKE YOUR SELECTION, & ISSUE
THE WORK ORDER TO BEGIN PROJECT, (YES IT IS
THAT SIMPLE)

SHOULD YOU RECEIVE NEGATIVE COMMENTS, ESPECIALLY
FROM THE "ECO. INDUSTRY" (ECO. WACKO'S), THEN
SIMPLY FILE THEM IN THE PAPER SHREDDER!
FOR THE BETTERMENT OF TRINITY COUNTY
PUBLIC UTILITIES & THE PEOPLE THEY SERVE
THIS PROJECT MUST GO FORWARD.
"GIT ER DONE"

BEST OF LUCK
BOB SUSAVILLA
P.O. Box 645
Hay Fork, Ga.
96041

BS-1

Response to BS-1:

The comment has been noted. No changes to the DEIS resulted from this comment.

TO: Western Area Power Administration

We here in the East Fork Canyon are laughing over the plan you cooked up with TCPUD.

For 50 years we tried to get public power here. What we got was to be Red lined & Black listed. Beyond a few mouthy "1955 DAM Agreements" there was nothing from Congressman Wally Herger.

TUPD got \$350,000 as a cash gift every year but not one penny was spent to expand the grid. Now, you put in a new, shorter line to Weaver ville that is supposed to save on transmission costs. And, those savings will go to lower the bills of those already on the grid -- not one red cent will go to expand the grid. We've been told if we want power, we can pay TUPD \$100,000 per house.

Lyndon Johnson electrified Texas in the 1930s at public expense but, Trinity County citizens, who helped, via their

CM-1

Response to CM-1:

Better provision of electricity, as the commenter suggests, might conceivably facilitate economic growth and reverse population decline in the area that would be supplied by the transmission line. However, in addition to better provision of electricity, various other economic and demographic factors in the area would have to be favorable in order for additional growth to occur. Among these factors would be the potential for economic development of the various natural, environmental and human resources in the area and the prevailing relative cost of doing business. Given the current economic base in the area to be supplied by the proposed line, it is unlikely that the supply of electricity alone would contribute to significant growth in the area, or that other economic factors, combined with more connections to the grid, would result in significant additional sources of economic and demographic growth.

Providing electricity service to all households in sparsely populated rural areas could be prohibitively expensive. It is estimated that the improved electricity reliability that would result from with the proposed additional transmission line would lower the grid maintenance costs and the overall cost of providing electric service. As a result, it is possible that this might give more households in the area access to electricity supplies.

② taxes pay for one electric project after another, can go to Hell.

CM-2

Property values here remain static because we can't get power on phones & the population is shrinking (within 1000 feet of me are 3 abandoned houses). We paid for every one else's electrification but, we will never see it ourselves, unless we pay millions out of our own pocket: we can't, we were already picked clean by PG&E PUD for others.

I have lived all over the U.S.A. & in Europe & been a few other places & Trinity County is the only place where people in the richest country in the world are denied power while the U.S. is paying in Iraq to restore war-damaged lines & the poorest hovels in Africa sprout satellite dishes. You & TUPD make me sick.

C. Munn
Box 1331
Hayfork CA 96041

Response to CM-2:

Please see response to comment CM-1.



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(2/28/2007) TrinityEIS EIS - Environmental Impact Statement, Trinity PUD

Page 1

From: Stanton Quail <shirley_stan@sbcglobal.net>
To: <trinityeis@wapa.gov>
Date: 2/20/2007 3:15 PM
Subject: Environmental Impact Statement, Trinity PUD

SQ-1

Reviewed the EIS for Trinity PUD Direct interconnection and am deeply concerned on the placement of the poles as you enter my property 025-040-2900. That location is a planned building site. A letter is being forwarded on this subject.
Stan Quail

Response to SQ-1:

Western reviewed the proposed pole locations with Mr. Quail, and an agreement was reached on new pole locations that will not interfere with the building site.

February 20, 2007

Mr. Steve Tuggle
Natural Resources Manager, N 1400
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630-4710

Dear Sir:

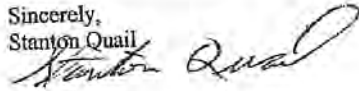
SQ-2

Upon review of the comprehensive report I'm deeply concerned that the placements of the poles and power lines where they enter my parcel # 025-040-2900 are on my developed building site. My son expects to build his retirement home there in the near future. Additionally, I've spent a considerable amount of money to set up the site with bulldozing and survey costs to support the lot line change as the location straddled two properties. There is not another location on the 20 acres for a building site with the view, private lake access, road access, and power and water availability. I've had several offers to buy the site with the best offer from a retired school teacher for \$3000 per acre if I installed a septic tank and leach field.

SQ-3

It is requested that we work out a different location for the power poles where you plan on entering my property and I would like someone to physically walk me through the planned installation to see if there are other problems. I'm having some difficulty as all the info I have is the plane and the map on page 166 of that plan.

Sincerely,
Stanton Quail



Response to SQ-2:

See response to comment SQ-1.

Response to SQ-3:

See response to comment SQ-1.

Sue Sinclair
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630-4710

MARCH, 2, 2007

Reference: Draft Environment Impact Statement, Trinity Public
Utilities District dated 8 Feb.2007

Dear Sue Sinclair,

After a detailed review of the above referenced Draft Environmental Impact Statement and the more detailed maps you forwarded later I find that your planned installation of power poles will be on my planned Building site. This will effectively make the site useless.

In order to satisfy your requirement with minimum impact on the building site I believe You could go directly from pole number 5/3 (reference attached map) to pole 5/5. This appears to be within your maximum pole separation criteria and would leave the building site useable, minimize the view obstruction, and reduce the impact of the electromagnetic fields set up by the power lines.

My son Michael Quail will be available on location the week of March 4 through the 7th. If some one will meet with him he can help resolve the problem. He can be reached while in the area at Ph 530-778-3487 or at the summer home at 671 Jessup Gulch Road, Lewiston, CA

I'm sorry I can not be there myself but I just got out of the hospital and can't travel yet.

Sincerely,
Stanton Quail



Attach- 1 - shows line from 5/3 up on hill to 5/5
below building site. Angle structure 5/4 on
building site would be removed / bypassed.

SQ-4

Response to SQ-4:

See response to comment SQ-1.



WRITTEN COMMENT SHEET

TRINITY COUNTY PUBLIC UTILITY DISTRICT
DIRECT INTERCONNECTION PROJECT EIS



If you have any issues, concerns, or questions that you would like addressed in the Trinity County Public Utility District Direct Interconnection Project Environmental Impact Statement (EIS), please complete this response sheet.

MQ-1

We Have concerns About Poles 5/2 & 5/4
Being on one of our Building sights And I
Have talked with Steve & in length with Mark
Wieringa And Request A walk through to see
About Moving these poles to A Different Location
Thank you for All the info

Michael Quail

5589 Harvard Dr
San Jose Ca 95118
408-723-4805

Stan Quail

1793 Chetamon Ct
Sunnyvale Ca 94087
408-245-2491

Please hand in your completed comment sheet today to ensure your input is considered, or if you would like to mail your comments, please use the address below.

Western Area Power Administration
Trinity EIS
P.O. Box 281213
12155 West Alameda Parkway
Lakewood, Colorado 80228-8213

If you prefer, give us a call at 1-800.336-7288 or e-mail trinityeis@wapa.gov

Thank you for your interest and participation!

Response to MQ-1:

See response to comment SQ-1.



WRITTEN COMMENT SHEET

TRINITY COUNTY PUBLIC UTILITY DISTRICT
DIRECT INTERCONNECTION PROJECT EIS



If you have any issues, concerns, or questions that you would like addressed in the Trinity County Public Utility District Direct Interconnection Project Environmental Impact Statement (EIS), please complete this response sheet.

UNK-1

The access roads from the Trinity Tie at Lewiston all the way to the Weaverville switch yard need to have a rock surface of sufficient depth to allow utility truck access in wet weather without causing rutting or surface erosion. These roads are located on erosive soils, Decomposed Granite that is readily transported to watercourses. The watersheds are utilized by Coho Salmon, a federally listed species. Rocking access roads is the only reasonable mitigation to reduce potential significant adverse impacts.

Please hand in your completed comment sheet today to ensure your input is considered, or if you would like to mail your comments, please use the address below.

Western Area Power Administration
Trinity EIS
P.O. Box 281213
12155 West Alameda Parkway
Lakewood, Colorado 80228-8213

If you prefer, give us a call at 1-800.336-7288 or e-mail trinityeis@wapa.gov

Thank you for your interest and participation!

Response to UNK-1:

See response to comment RWQCB-4.

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PUBLIC HEARING COMMENTS AND RESPONSES



DRAFT EIS

Attendance Roster

 Topic: TRINITY Public Utility District DIRECT INTERCONNECTION PROJECT

Location:

Date: MARCH 6 2007
BEST WESTERN VICTORIAN INN
NEAVERTINE CA

Name	Name
1. Joe Maschowski	19.
2. Tom Walz	20.
3. Cheryl Walz	21.
4. Jim Carigan - NOR-RELMK NATION	22.
5. George + Carol Lueby	23.
6. Duke Coleman	24.
7. Joan E Carr	25.
8. Dick Morris % Trinity PUD	26.
9. Michael Quail → 5589 Harvard Dr San Jose Ca 95118	27.
10. Anne G Frank 1743 Chetamon St Sunnyvale Ca. 94087	28.
11. Mary Ellen Grigshy	29.
12. Kristine Slahn	30.
13. H. Drell	31.
14. Tom Ludden	32.
15. Howard MATZAT BLM	33.
16. CHASE LENTZ BLM	34.
17.	35.
18.	36.

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ORIGINAL

TRINITY PUBLIC UTILITY DISTRICT
INTERCONNECTION PROJECT
PUBLIC HEARING

--000--

Best Western Victorian Inn
1709 Main Street
Weaverville, California

Weaverville
Trinity County, California

Tuesday, March 6, 2007

--000--

EVANGELINE McGONEGAL, CSR

License No. 5511

J.V. KILLINGSWORTH & ASSOCIATES
CERTIFIED SHORTHAND REPORTERS



1422 OREGON STREET
REDDING, CALIFORNIA 96001
jvk@reddingdepos.com
(530) 241-2224
(800) 995-0447
FAX (530) 241-5992

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APPEARANCES

FOR WESTERN AREA POWER ADMINISTRATION:

Western Area Power Administration
Office of General Counsel
Lakewood, Colorado
BY: Adam Arellano
Attorney at Law

NEPA DOCUMENT MANAGER:

BY: Mark Wieringa

NATURAL RESOURCES MANAGER:

BY: Steve Tuggle

WILDLIFE BIOLOGIST:

BY: John Bridges

PROJECT ENGINEER:

BY: Krishna Shah

SENIOR GIS SPECIALIST:

BY: Anton Kozhevnikov

BIOLOGIST:

BY: Ami Goerdts

ARCHEOLOGIST:

BY: Cherie Johnston-Waldear

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INDEX

PAGE

OPENING STATEMENT BY MR. ARELLANO:

4

PUBLIC COMMENTS:

8

3

J.V. KILLINGSWORTH & ASSOCIATES REDDING, CA 800-995-0447

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1 WEAVERVILLE, CALIFORNIA; TUESDAY, MARCH 6 2007

2 ---o0o---

3 OPENING STATEMENT:

4 HEARING OFFICER: Good evening, everybody. If we
5 could get started.

6 My name is Adam Arellano. I'm an attorney with
7 Western Area Power District. On behalf of Western, I
8 would like to thank you all for being here.

9 Western, for those of you who don't know, is a
10 Federal Agency Department who markets Federal electric
11 power to municipalities, public utilities, and the
12 Native American tribes.

13 If anybody can't hear me, just let me know. I
14 just recently got over bronchitis.

15 The purpose of today's public hearing -- and I
16 hope nobody is disappointed about this. We're not giving
17 any presentation today. We're not here to speak -- the
18 purpose of the public hearing is to give an opportunity
19 for the public to give us comments on anything that is in
20 the Draft EIS.

21 It is a requirement under the National
22 Environmental Policy Act, which is known as NEPA, and
23 prior to the start of this meeting all the Western
24 representatives were available to answer any questions you
25 have. If you have any more, once this formal hearing is

4

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1 over you can ask more questions or get contact information
2 for questions that might come up later.

3 For Western Area Power Administration today we
4 have Mark Wieringa. He's our NEPA Document Manager.
5 Steve Tuggle, he's our Natural Resources Manager.
6 John Bridges, he's in the back. He's our Wildlife
7 Biologist. Krishna Shah is here. He's our Project
8 Engineer. Anton is here. And I can't pronounce his last
9 name. He's our GIS Specialist. Ami Goerdts is here.
10 She's a biologist. And Cherie Johnston-Walstead, our
11 Archeologist is also here. So if you have any questions
12 after this formal hearing, you can go back and ask these
13 people questions.

14 Western proposes to construct, operate and
15 maintain transmission lines that's going to bring
16 electricity into Trinity County. Portions of the proposed
17 transmission lines would cross lands managed by the
18 U.S. Forest Service, the Bureau of Land Management, and
19 the Bureau of Reclamation. So all three of those agencies
20 are participating in the EIS. They all have decisions
21 that they have to make.

22 The objective of the project is to enhance the
23 reliability of service into Trinity County. And from what
24 I hear, you guys have had a couple of weeks of power
25 outages that have occurred. So I'm sure you guys all

5

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1 understand how important reliable service is.

2 The major component of the proposed project is a
3 16-mile long 60kV overhead transmission line called the
4 Trinity Public Utility District Direct Interconnection.
5 The proposed Project would connect to Western's Trinity
6 Substitution at Trinity Power Plant. Approximately
7 5.3 miles of existing 12-kV distribution line will be
8 removed, and the project would require the construction of
9 a new tap structure and associated equipment, and a new
10 switchyard near Weaverville. About two miles of new
11 access roads will be needed. This would consist of short
12 spurs from existing logging and access road network to
13 various pole locations. And some exiting access roads
14 would need to be upgraded for the construction of the
15 project.

16 The proposed project right now is in Draft EIS,
17 and anybody who wants a copy of the Draft EIS, we have, I
18 believe, a few copies here. If not, I can get you
19 information to request those and get those out to you.

20 As I said before, the public hearing is to
21 receive formal comments from the public on the Proposed
22 Project and Draft EIS. There's other ways that you can
23 give us comments if you don't want to stand up and do it
24 right now.

25 You can do it informally after the hearing. You

6

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1 can come up to one of us, and we can help you get your
2 comments down. Another way is, of course, speaking here
3 today. We have some paper that we can receive comments in
4 writing here today. If you want to mail them in, you can
5 mail them in. They have to be postmarked by April 2nd,
6 2007 or they can be faxed or e-mailed to us by the same
7 date. Regardless of how we receive the comments they are
8 going to be given equal weight and consideration. They
9 all become part of the administrative record, and will be
10 considered in preparation of the Final EIS.

11 If you want to submit written comments later,
12 they are going to go to Steve Tuggle. He's our Natural
13 Resources Manager. That address would be Western Area
14 Power Administration, Sierra Nevada Region, 114 Parkshore
15 Drive, Folsom, California 95630-4710. The phone number is
16 (916) 353-4549. And the fax number is (916) 985-1935.
17 E-mail is trinityeis@wapa.gov.

18 As I told you guys before, the purpose for the
19 project is to improve the power system reliability, but
20 the Forest Service would need to issue a construction,
21 operation and maintenance plan. That would authorize the
22 construction, operation and maintenance of the utility
23 corridor for the new 60-kV transmission line. That's on
24 the National Forest System land. The Forest Service would
25 also need to authorize a timber sales contract for the

7

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1 logs to be removed from the rights of way on Forest
2 Service land and issue a temporary construction permit.

3 BLM would have to issue a ROW to Western to
4 authorize the construction and maintenance of a
5 transmission line; and Reclamation would have to grant
6 Western permission to temporarily cross its lands located
7 near the Trinity and Lewiston Dams for construction of the
8 transmission line, and for long-term access for operation
9 and maintenance of the line.

10 As you guys entered, I hope that everybody was
11 asked to sign in. If you could, before you leave, maybe
12 put down your addresses as well, and we can keep you
13 updated on this project as it continues. Is that all
14 right?

15 And we also ask if you do want to speak, to put a
16 little check mark by your name. I don't think anybody has
17 done that yet. If you do want to speak, we'll pass that
18 around and you can check your name off.

19 Nobody has checked it off yet. Anybody plan to
20 make comments today? Okay.

21 The court reporter this evening is
22 Evangeline McGonegal with JV Killingsworth & Associates.
23 She's recording the comments this evening. And if you
24 wish a copy of the hearing transcript, you can contact her
25 at JV Killingsworth & Associates at 1422 Oregon Street, in

8

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1 Redding, California 96001.

2 All the comments, all the substantive comments
3 received this evening and throughout the public comment
4 period will be addressed in the Final EIS. And public
5 comments on the Draft EIS, the comments assist the
6 decisionmakers by identifying the concerns and values of
7 interested parties and by pointing out any errors or
8 omissions in the Draft EIS. So it is important that we do
9 hear your comments, if you have them.

10 It is anticipated that the Final EIS will be
11 issued in June 2007. At that time the BLM, Forest
12 Service, and Reclamation, they issue a Record of Decision
13 on the decisions that they have to make. And then
14 following the issuance and filing it with the
15 U.S. Environmental Protection Agency there's a 30-day
16 waiting period, and then Western will issue its Record of
17 Decision.

18 So after this process is over we are going to be
19 available to answer any more questions that you have. At
20 this point I call upon our first speaker here. And I
21 think you are the only speaker, so you can say anything.

22 PUBLIC COMMENT:

23 MR. FRANK: My name is Jim Frank. And I was
24 wondering why you were installing wood poles versus steel
25 poles, single steel poles versus three wood ones, and

9

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JF-1

Response to JF-1:

Western coordinated with Trinity PUD on the design of the proposed 60-kV distribution line project. Wood poles are most commonly used for small distribution lines of this size. Steel poles are more expensive and do not offer offsetting benefits in this application, except in certain locations where long spans are needed. The need for up to 10 steel structures in such locations is noted in section 2.2.1.1 of the Draft EIS. With respect to steel being less intrusive than wood, few of the locations for the proposed line would be in locations regularly viewed by the public, while wood poles would be more in keeping with the general character of the region than would steel poles. The few steel poles required for the line would be made with weathering steel, which oxidizes rapidly to take on a flat, woodlike appearance. Regarding future capacity needs, the 60-kV capacity of the proposed line is more than adequate to meet the current and short-term growth needs of the area being served. Western does not consider long-term capacity needs when sizing a facility.

JF-1
(cont.)

1 insulating it for 110kV versus 60kV for future growth in
2 Weaverville. So you only have to do this one time instead
3 of having to come back later on. And I know PG&E is
4 upgrading their systems all over. 60kV is old stuff. 110
5 or even 220 is a better conductor. You can have longer
6 spans between steel towers. I think it would be less
7 intrusive to the public.

8 Those are my comments.

9 HEARING OFFICER: As to your questions, I can't
10 answer those questions. And I know there's some people
11 here who can; but during the formal part we're just here
12 to take your comments. So the comments that you did make
13 are now on the record.

14 Anybody else have comments?

15 MR. QUAIL: Michael Quail.

MQ-1

16 I had some questions on the steel towers. How
17 tall would the steel towers be as opposed to the wood
18 structures.

19 MR. FRANK: Steel towers would be probably
20 110 foot. That's probably the standard. It would be a
21 lot less -- take up a lot less space than three wood poles
22 like the 60kV has now. And you would only have one
23 insulator per tower, and it would -- or three insulators
24 per tower with one cross arm.

JF-2

25 MR. QUAIL: Thank you.

10

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Response to MQ-1:

Steel poles in the current application would probably not be substantially taller than proposed wood poles. Taller poles would serve to produce longer spans, but longer spans may not be feasible in many locations in the project area, since terrain generally dictates pole locations. The advantages of longer spans are more easily realized on flat terrain.

Response to JF-2:

Please see response to comment MQ-1.

MQ-2

1 I was just kind of curious -- because they are
2 real close to the buildings that we have -- if that type
3 of a tower would be tall or, you know, obstructing views
4 in our area.

5 We live on the backside of Lewiston where the
6 junction is going to come across.

JF-3

7 MR. FRANK: If I can make one more comment:
8 You can get those towers in green. They can paint them
9 green so you don't see them. They are not silver or
10 bright and shiney. You can get them -- if you have ever
11 been down to Napa County, they have them running through
12 that county, and they painted them all green, and they
13 blend in real well.

14 MR. QUAIL: Thank you.

15 HEARING OFFICER: All right. Anybody else have
16 any more comments?

MQ-3

17 MR. QUAIL: Like I said, the reason I asked about
18 these towers is because we have a couple of questions on a
19 couple of poles going in on our property. They are
20 putting a major three pole on a corner on our property
21 areas; but I have spoken with Mark and introduced myself
22 to Steve about the issues we have about moving these
23 possible towers just to a different spot. Because right
24 now their tentative is to put it in our future building
25 site, so we did have that concern. But I'm assured they

11

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Response to MQ-2:

Please see response to comment MQ-1.

Response to JF-3:

Please see response to comment MQ-1.

Response to MQ-3:

Western reviewed pole locations with Mr. Quail, and the two parties mutually agreed on a new location for the poles in question.

MQ-3
(cont.)

1 will work with us on that.

2 HEARING OFFICER: Okay. Well, if there's no more
3 comments, I guess we can break and go back to the informal
4 questions and answers. It seems you would probably be
5 better served that way.

6 MR. TUGGLE: Thank you.

7 (The Hearing was concluded at 7:19 p.m.)
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J.V. KILLINGSWORTH & ASSOCIATES REDDING, CA 800-995-0447

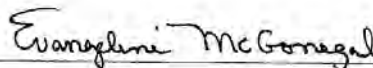
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CERTIFICATE OF CERTIFIED SHORTHAND REPORTER

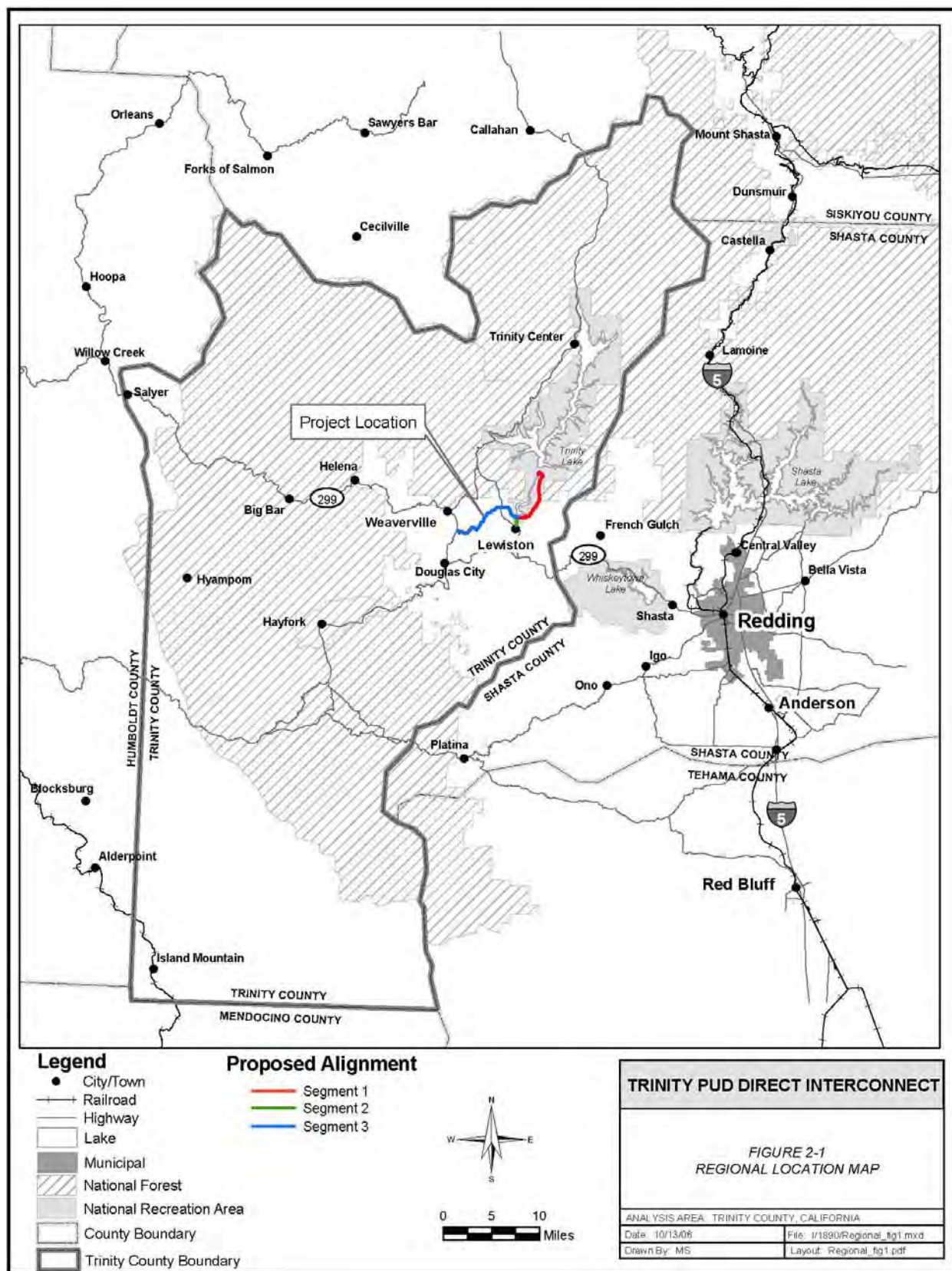
I, EVANGELINE MCGONEGAL, hereby certify that I am a Certified Shorthand Reporter of the State of California, in and for the County of Shasta, and that I took down verbatim in stenographic writing all of the testimony given and all of the proceedings had in the above-entitled matter fully, truly, and correctly, according to the best of my ability.

That my said stenographic writing contains a full, true, and correct record of all said testimony and proceedings; that I have caused my stenographic writing to be transcribed into typewriting; and that the foregoing pages constitute my said transcription of all such stenographic writing; and that the same is a full, true, accurate, and verbatim statement of all such testimony and proceedings had.

WITNESS MY HAND this 7th day of March, 2007.



EVANGELINE MCGONEGAL, CSR #5511



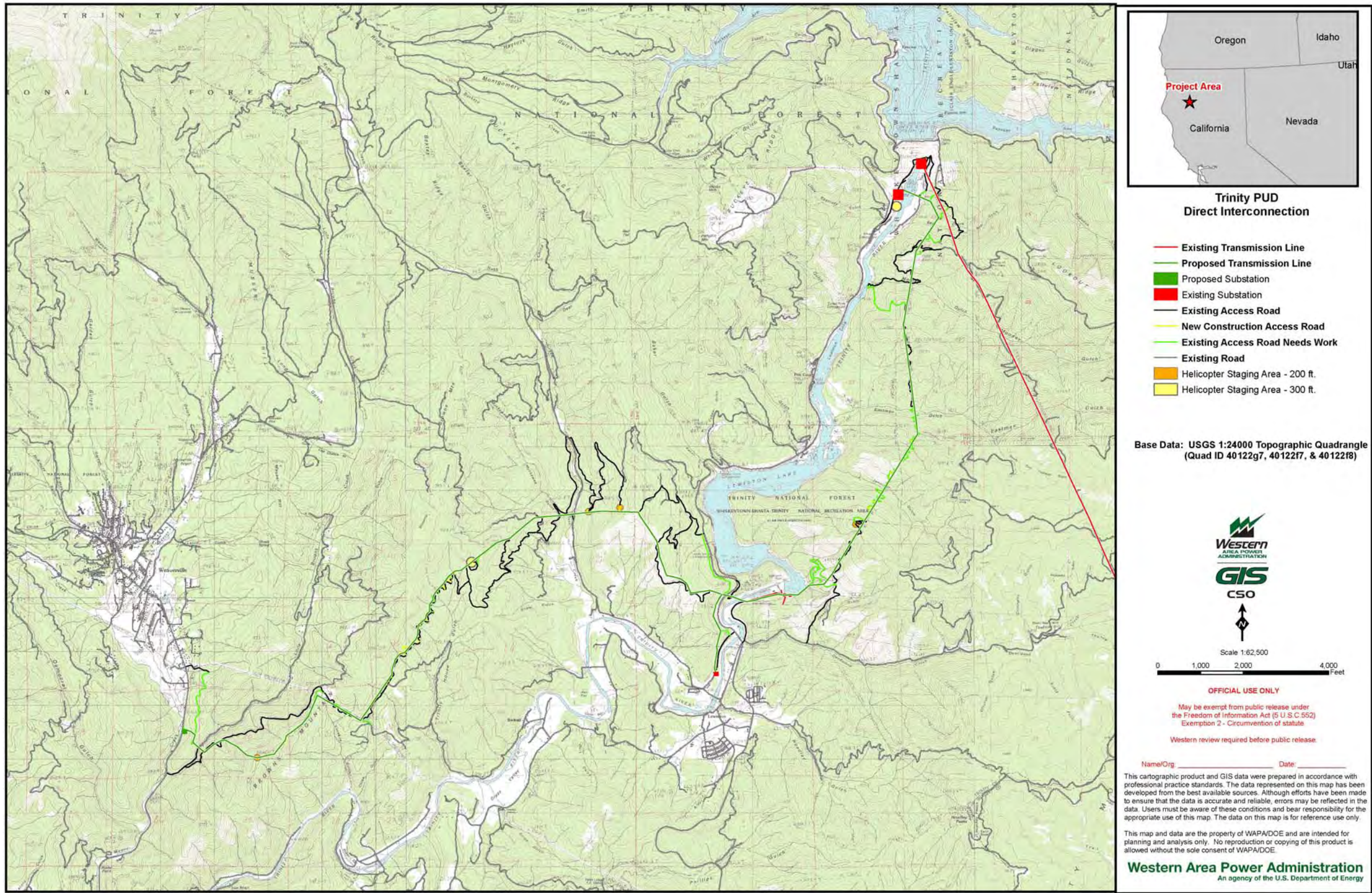
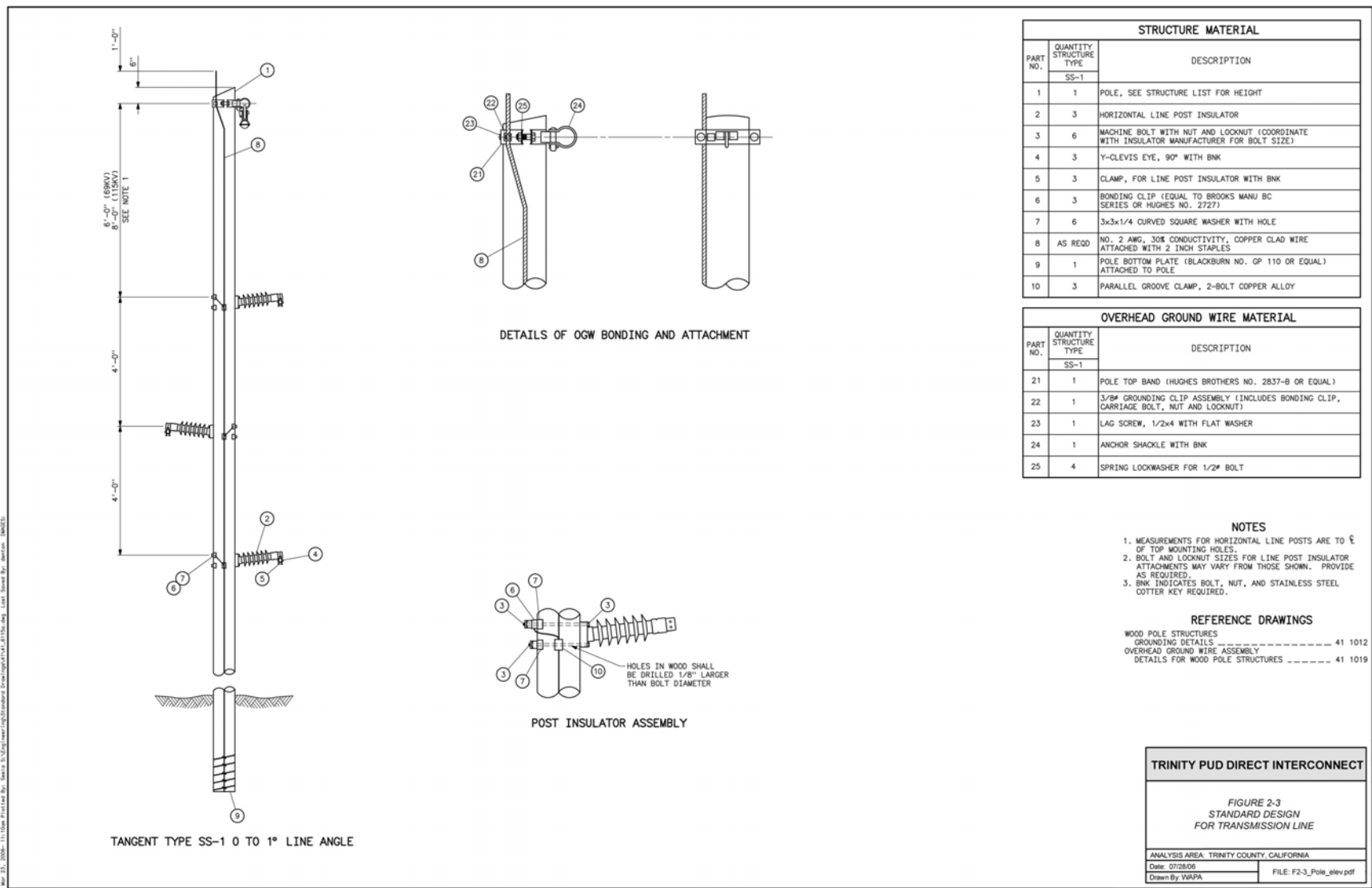
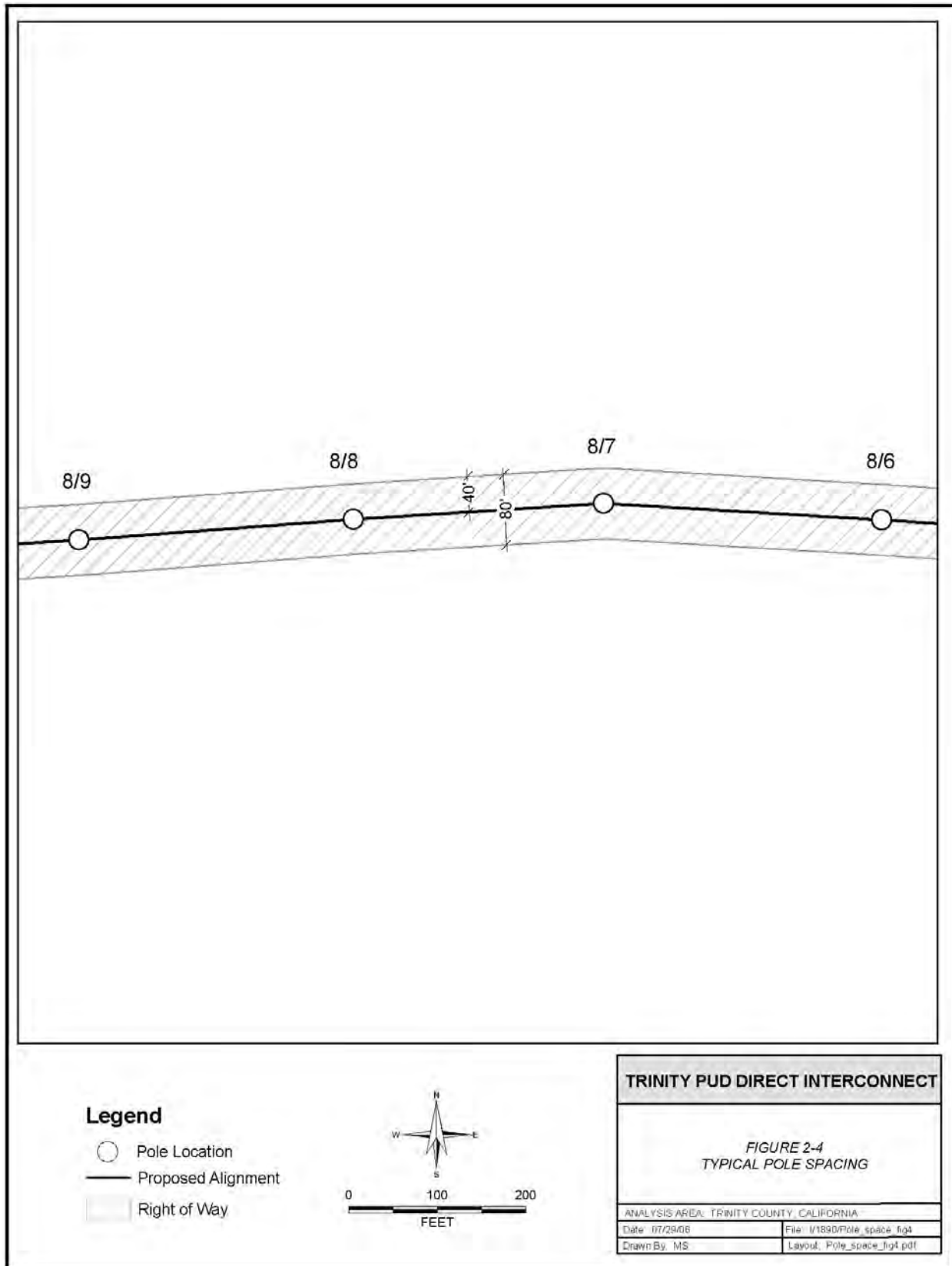
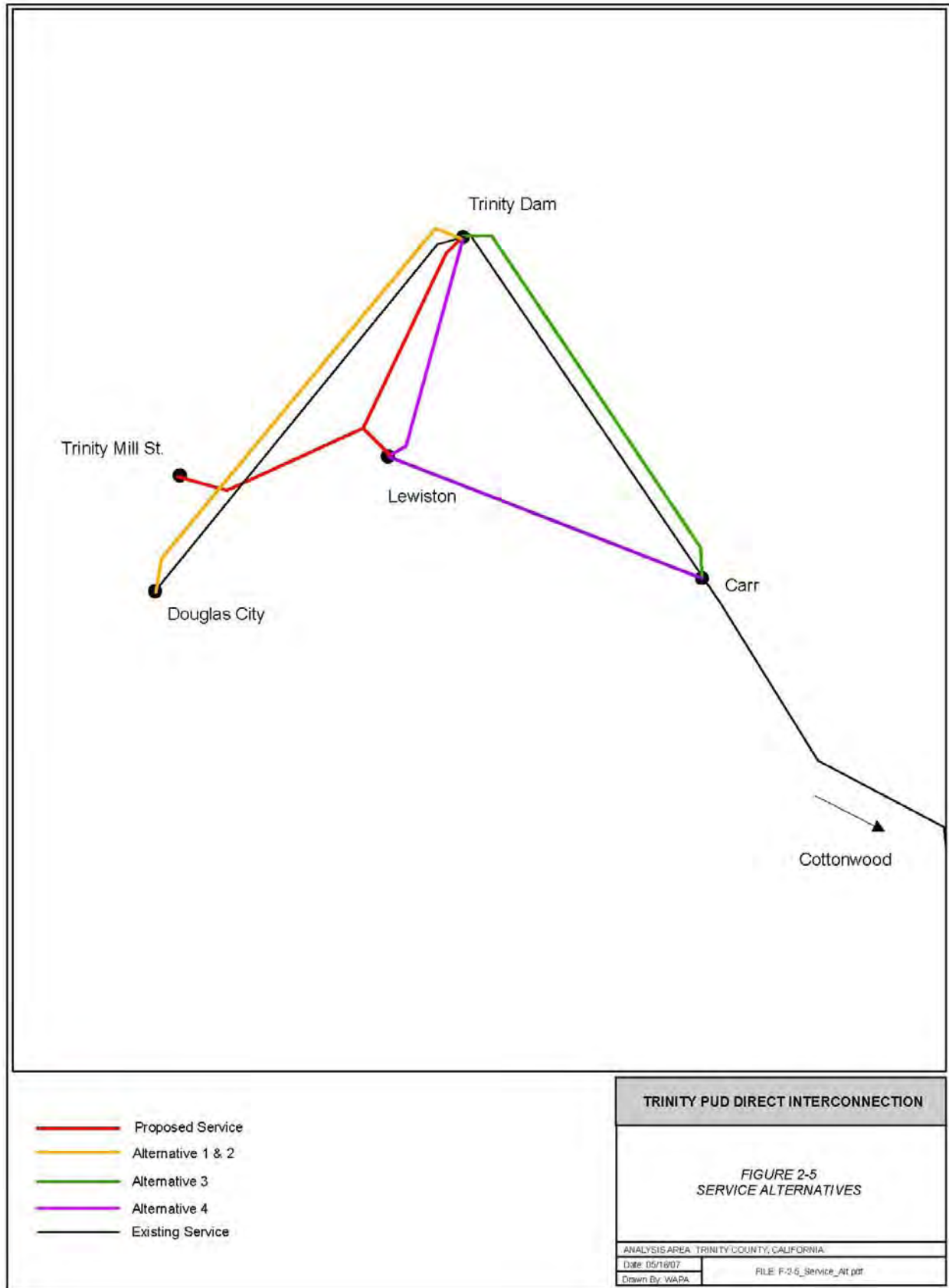
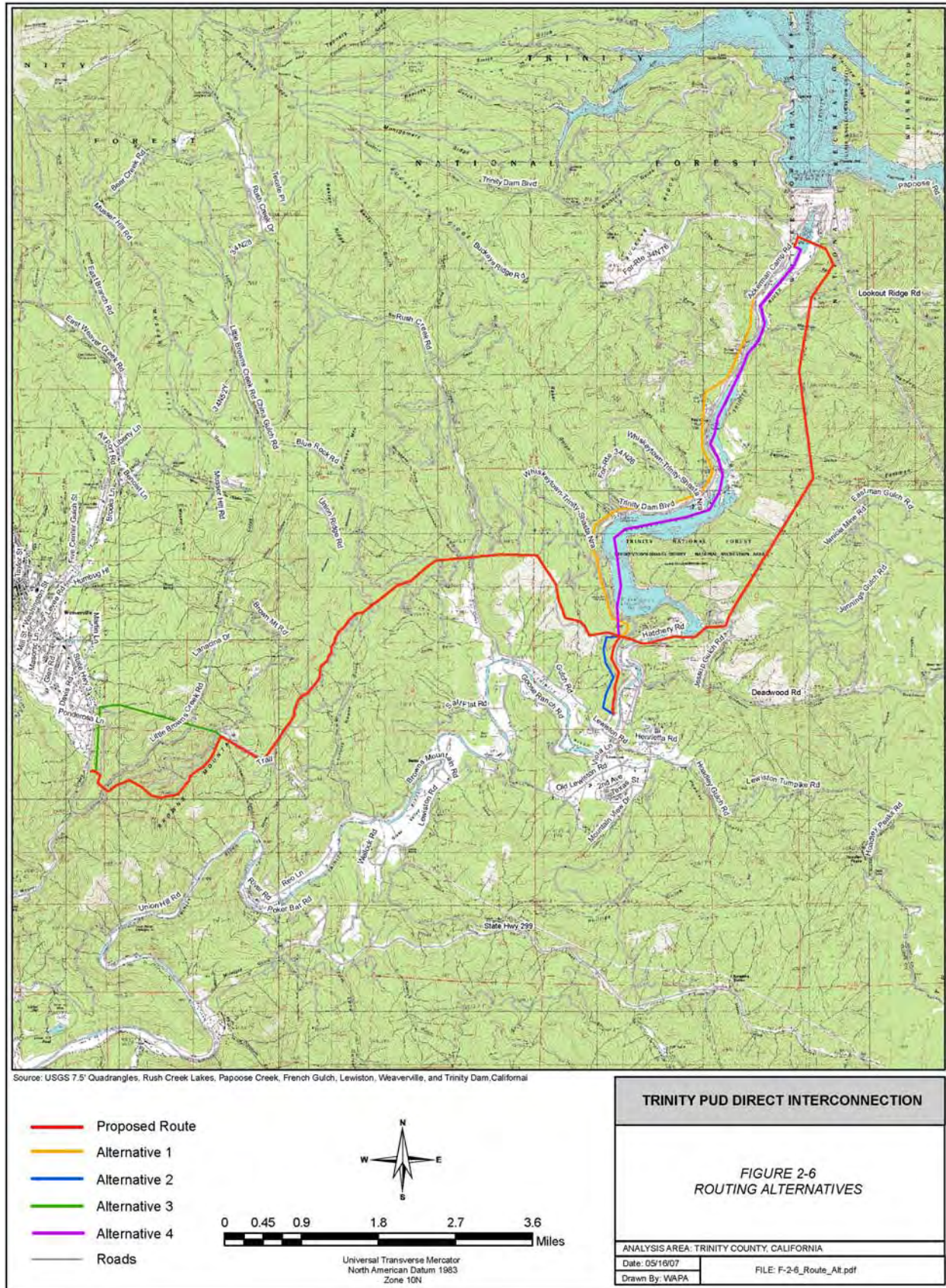


Figure 2-2 Vicinity Map









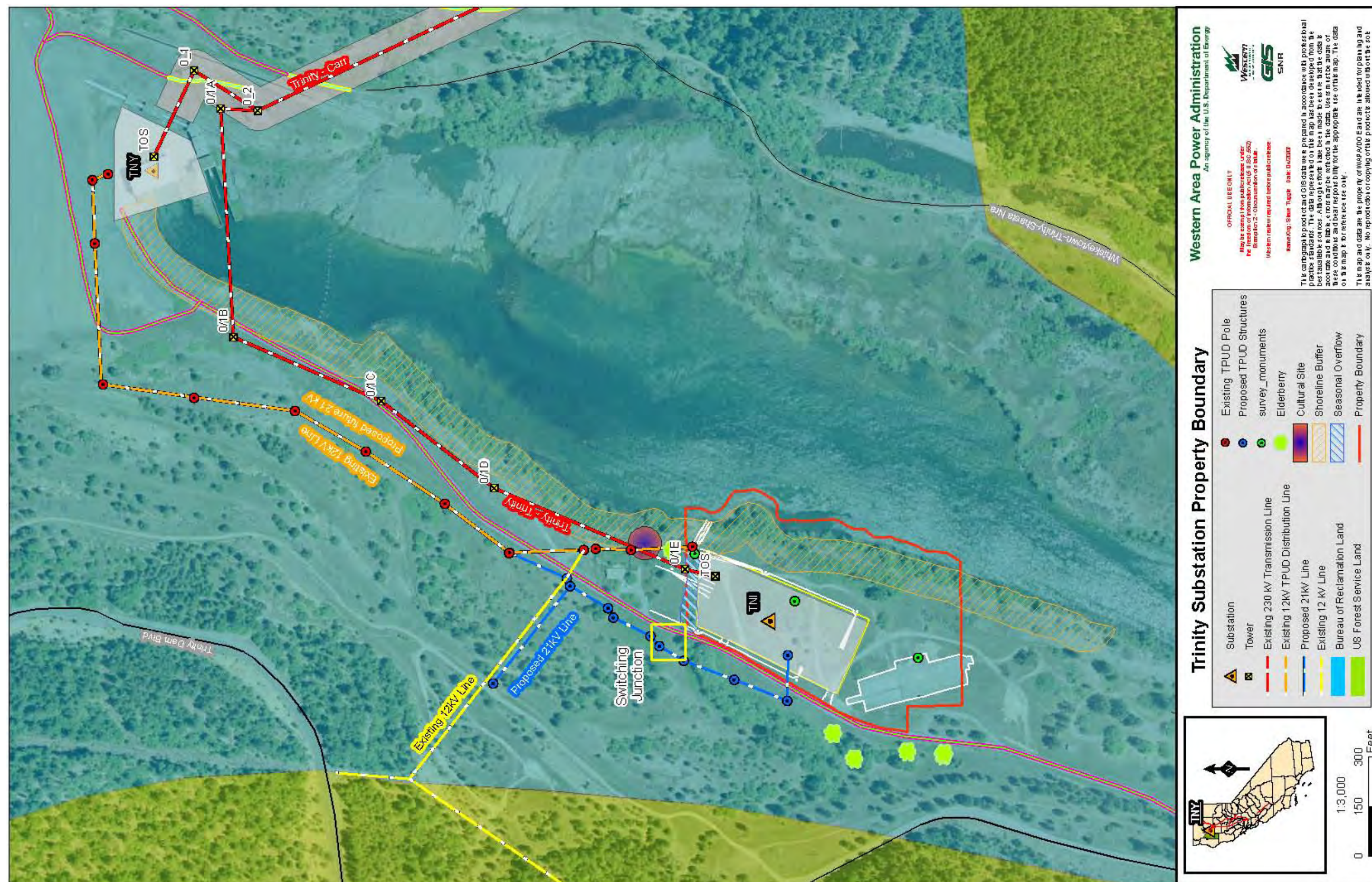


Figure 2-7 Aerial Photograph Showing the Footprint and Alignment of the Proposed 21-kV Distribution Line Segment and the Existing 12-kV Distribution Line

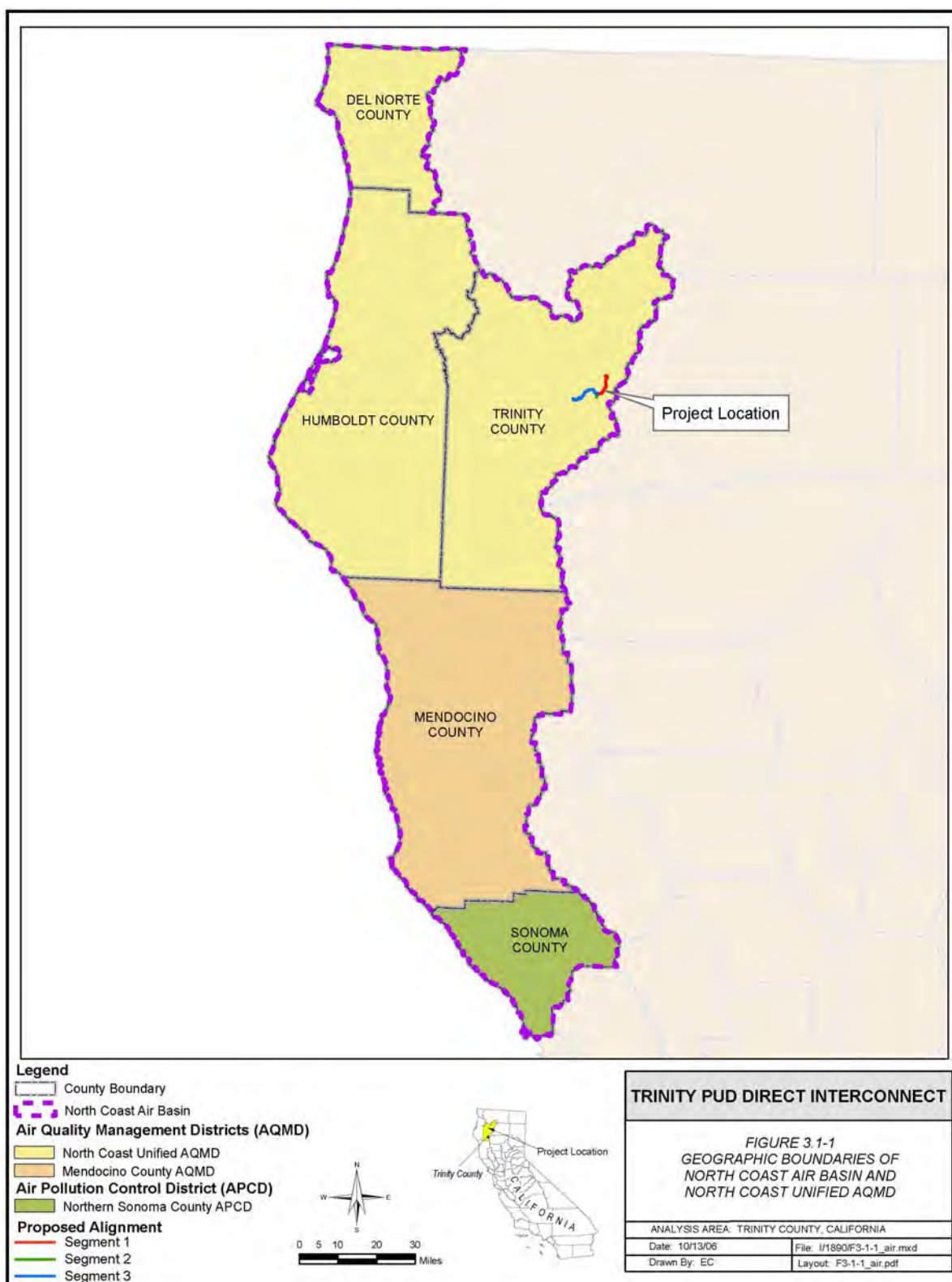


Figure 3.1-1 Geographic Boundaries of North Coast Air Basin and North Coast Unified AQMD

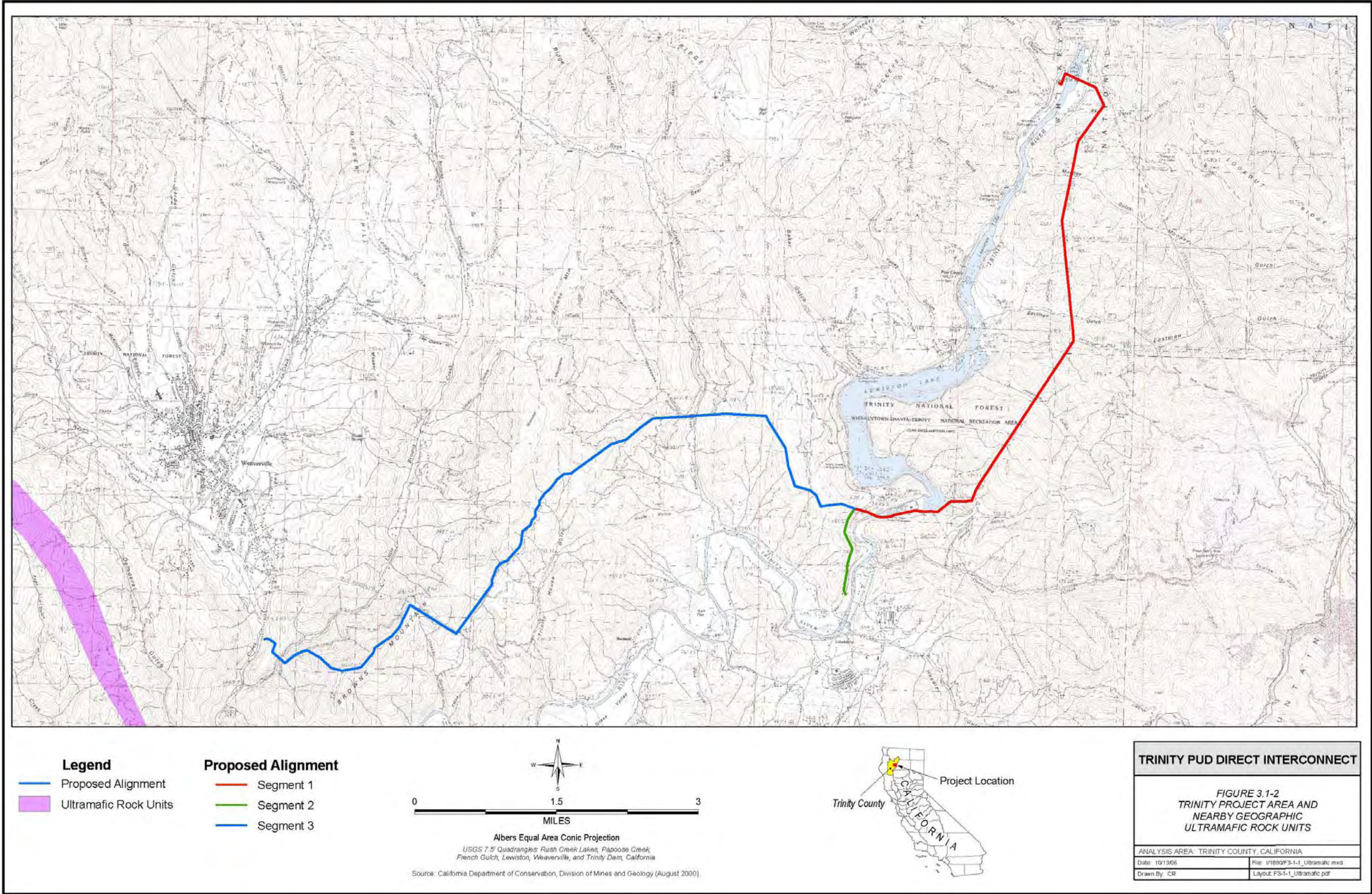


Figure 3.1-2 Trinity Project Area and Nearby Geographic Ultramafic Rock Units

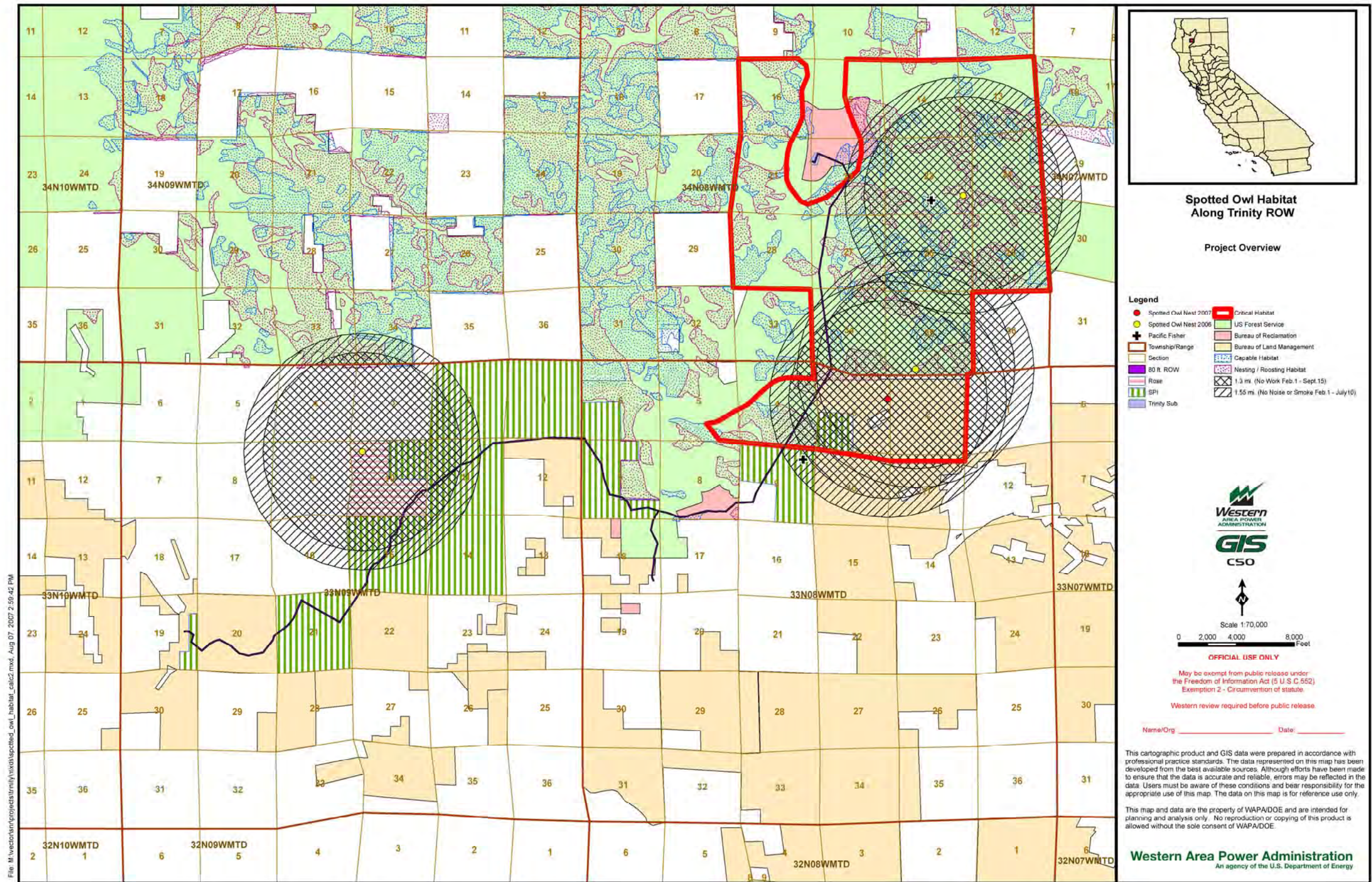


Figure 3.2-1 Spotted Owl Habitat along Trinity ROW: Project Overview

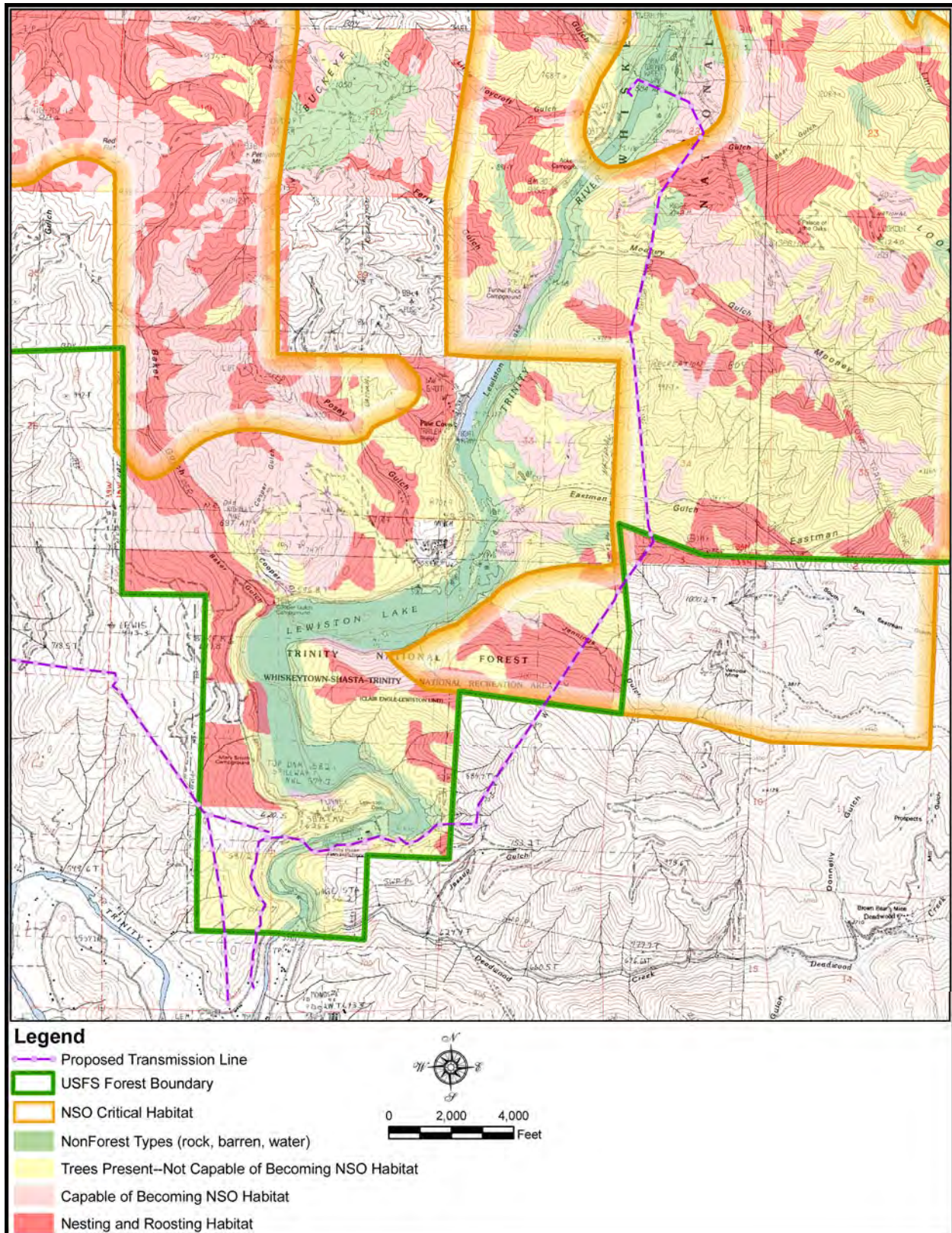


Figure 3.2-2 Northern Spotted Owl Critical Habitat and Habitat Structure Types

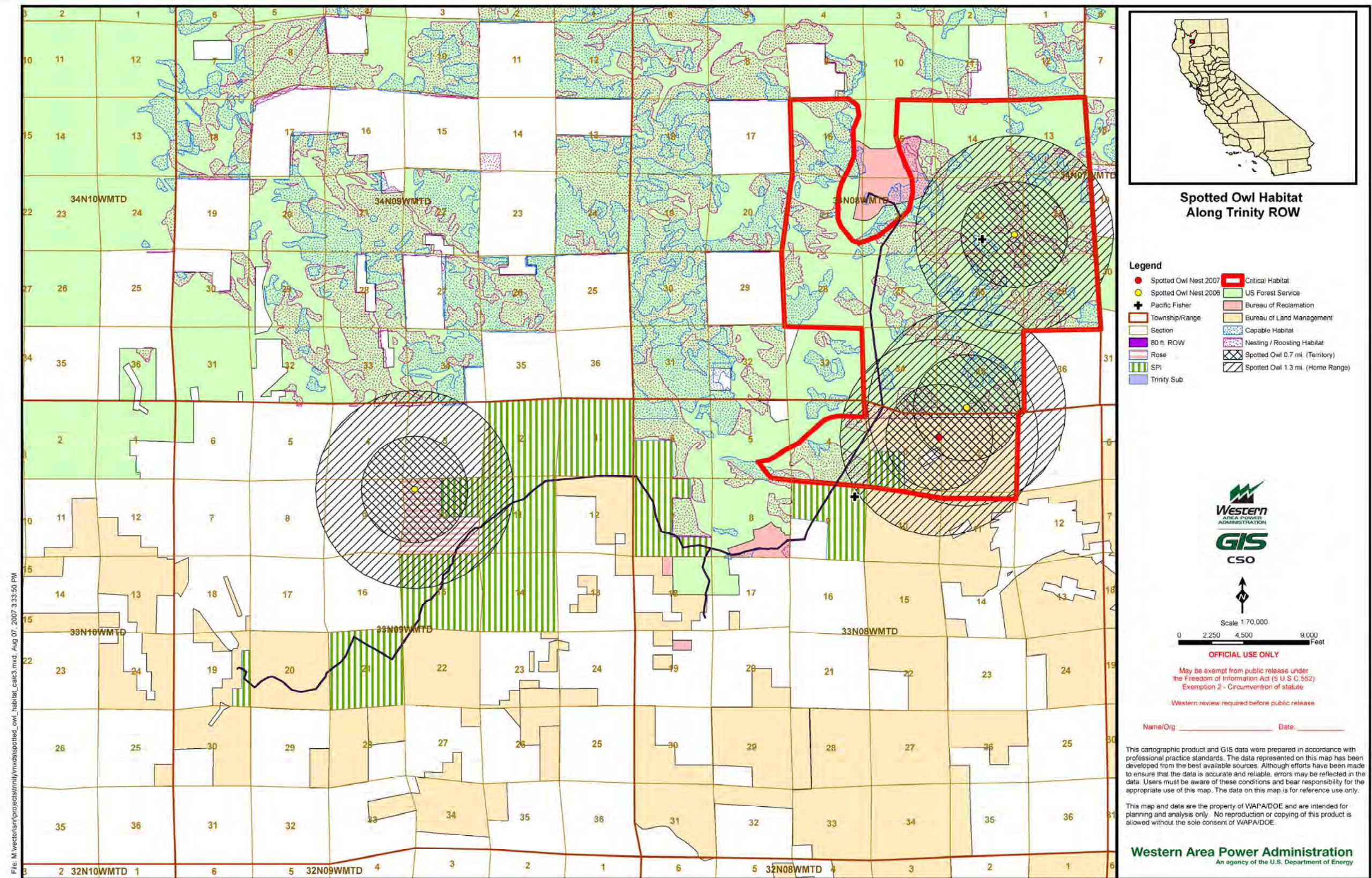


Figure 3.2-3 Spotted Owl Habitat along Trinity ROW

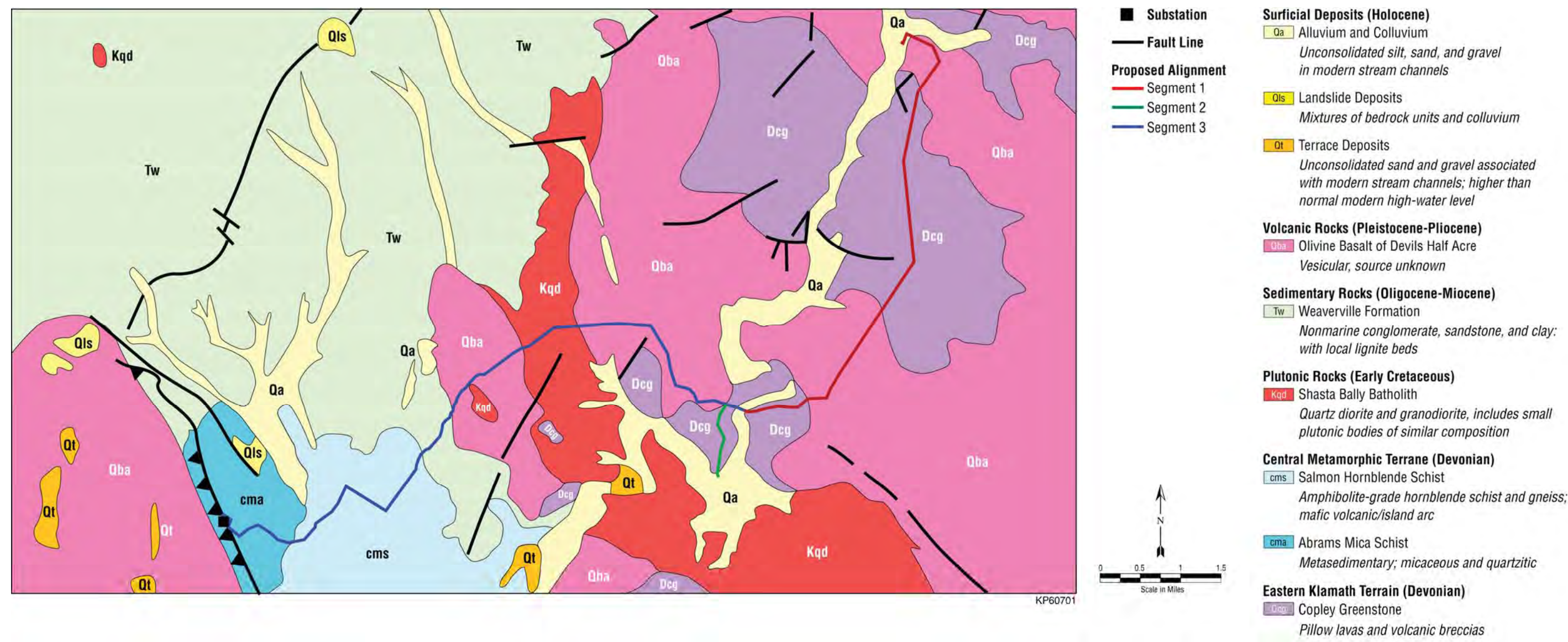
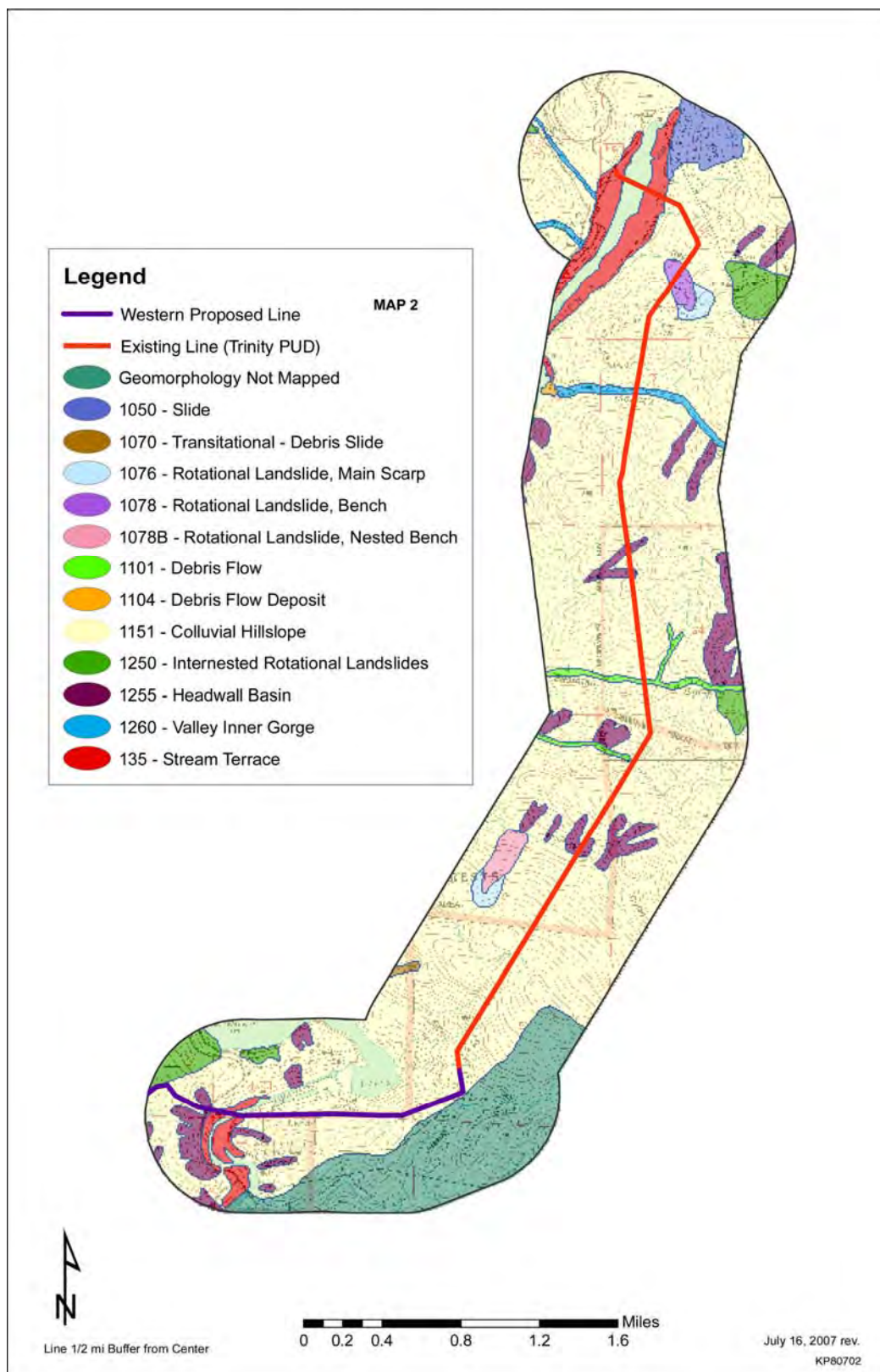


Figure 3.4-1a Geologic Map of the Project Area
(Source: Based on Fraticelli et al. 1987)



**Figure 3.4-1b Geomorphic Features along the Project ROW
(Segments 1 and 2)**

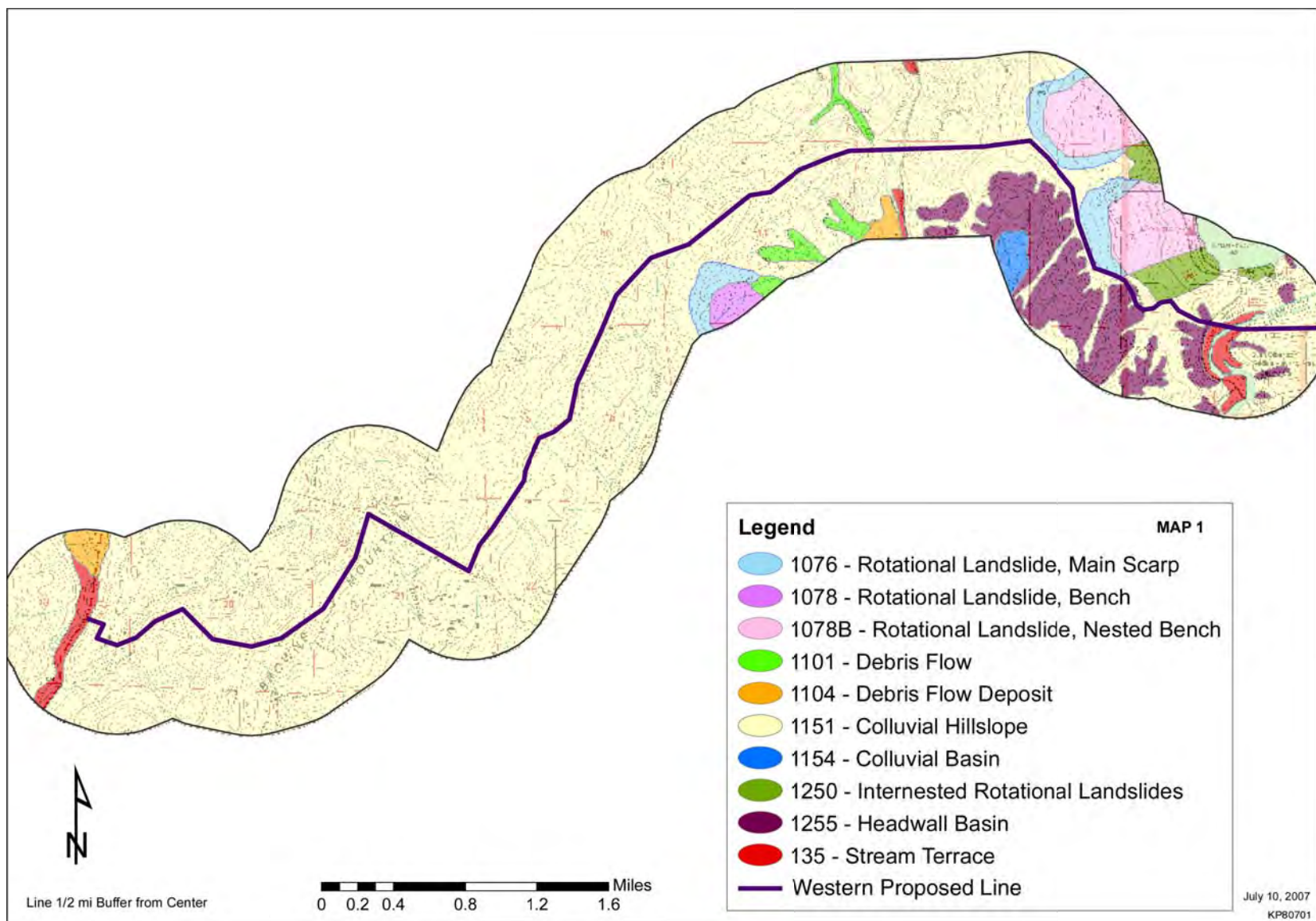
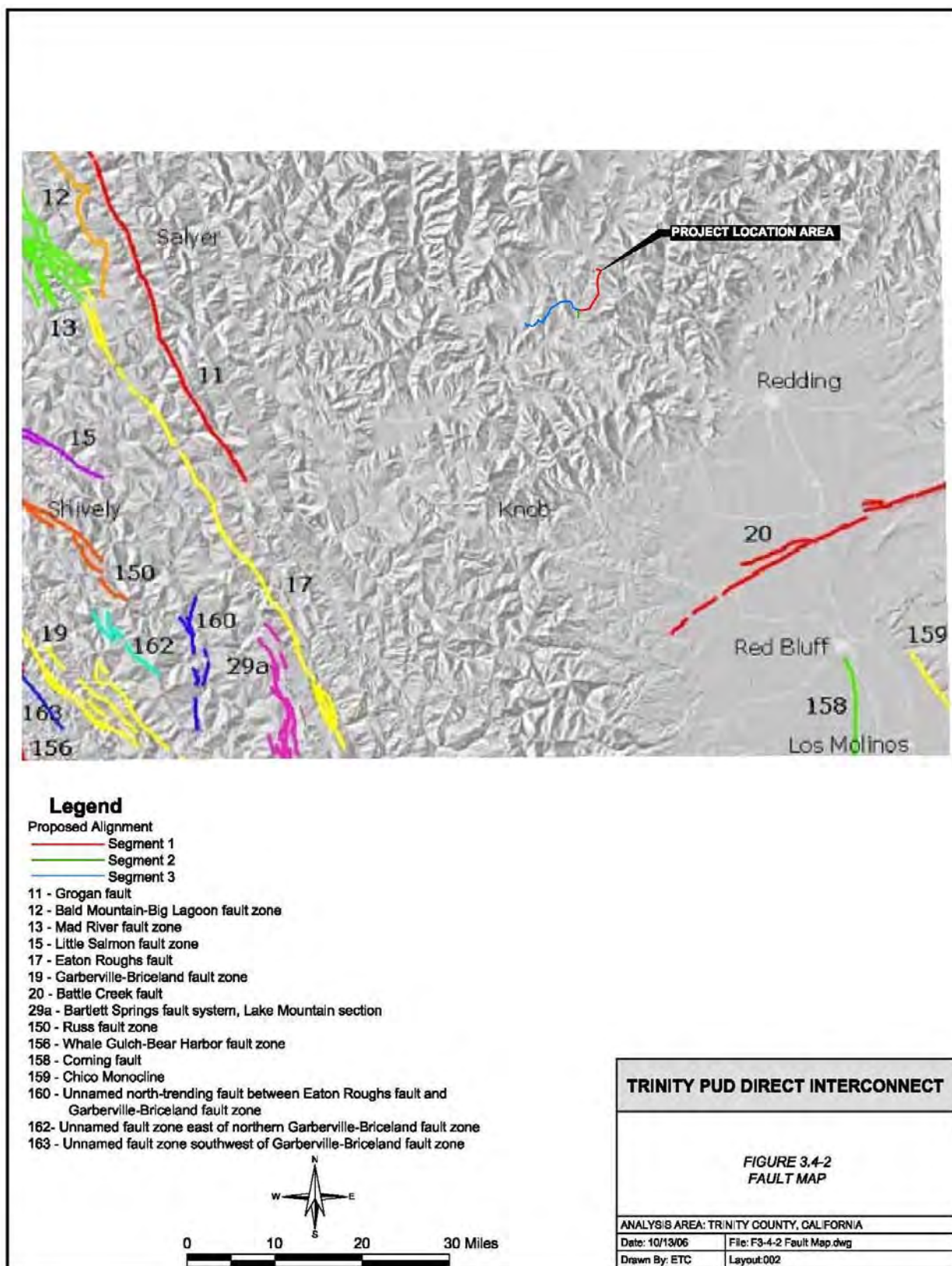
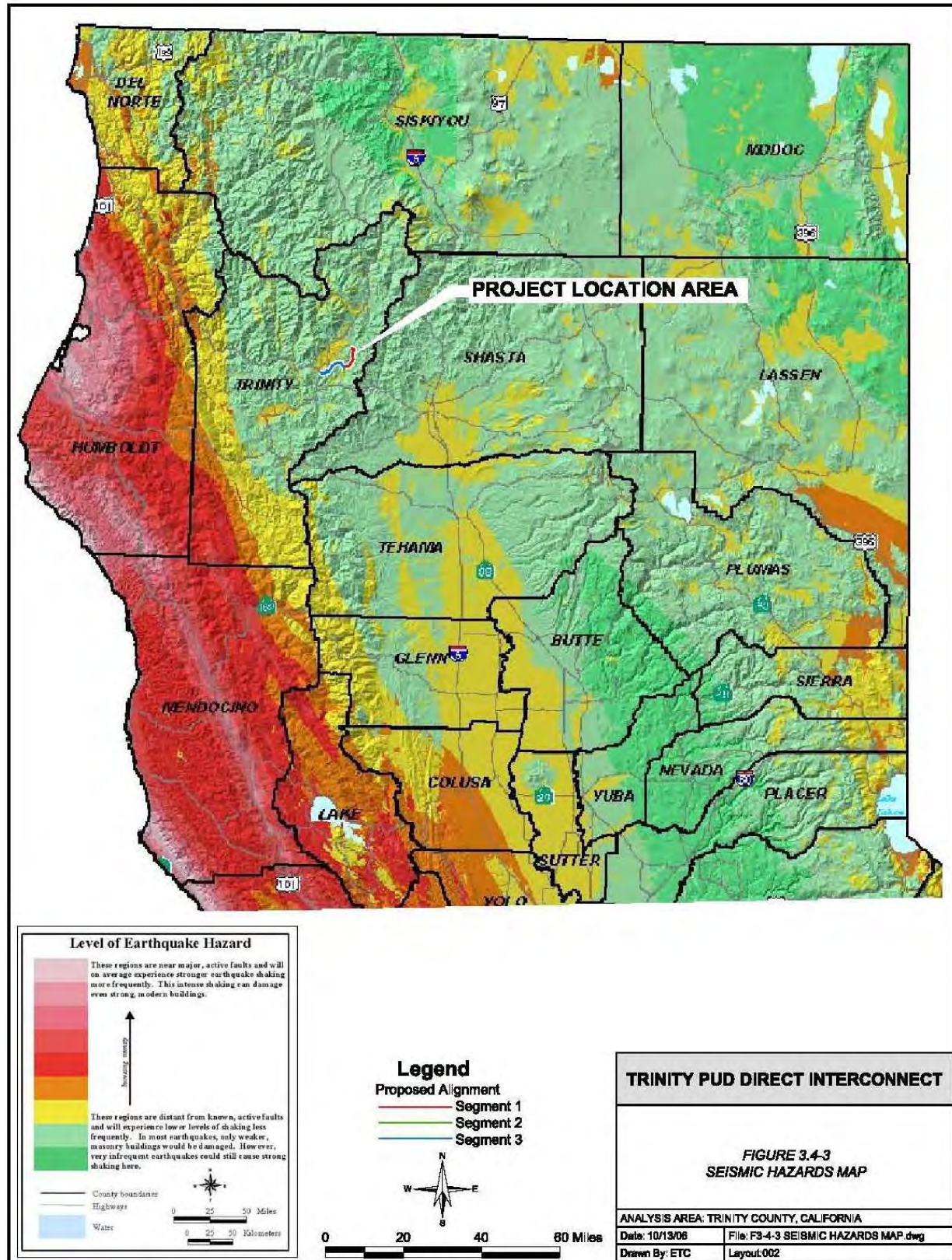
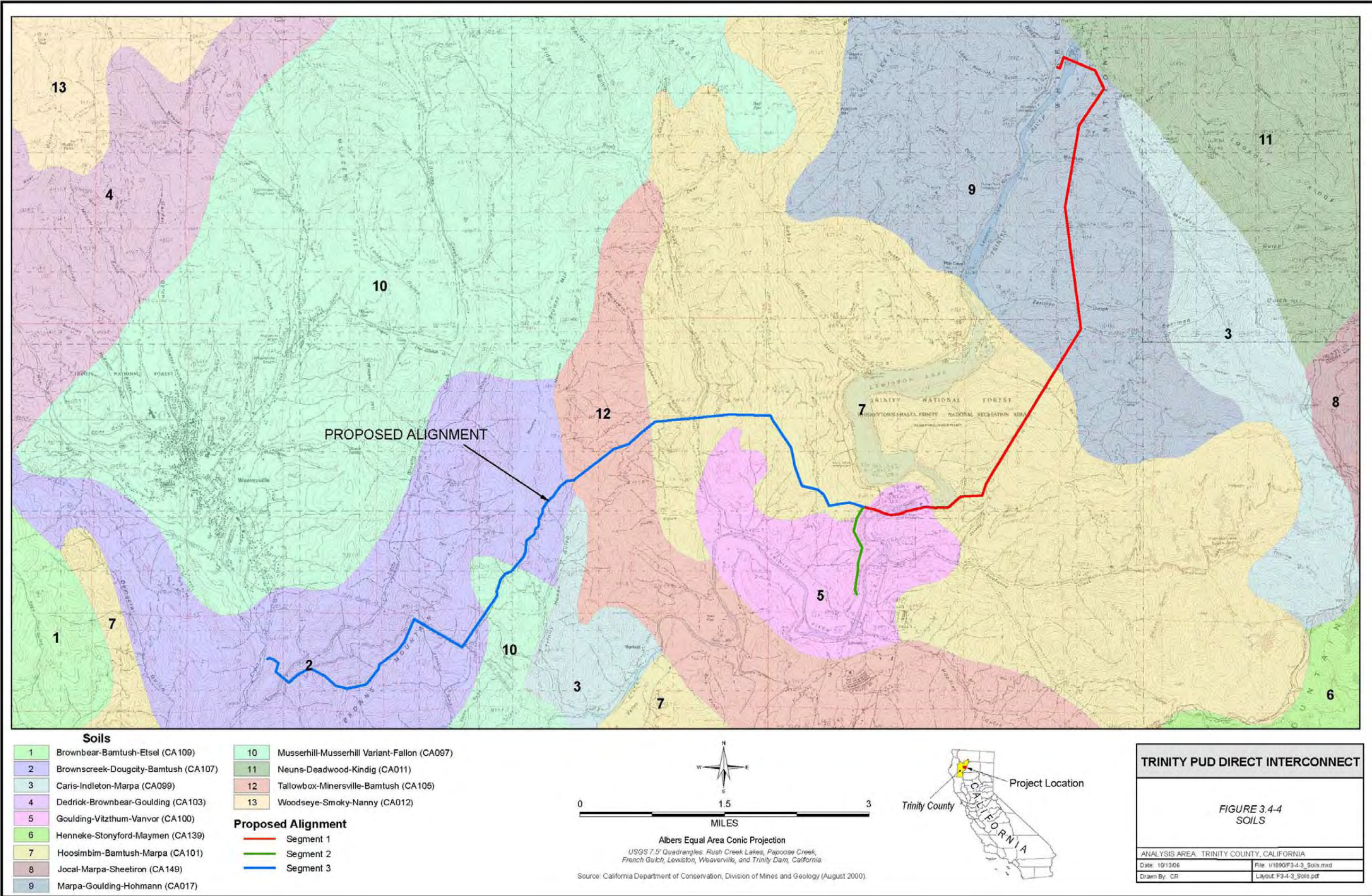
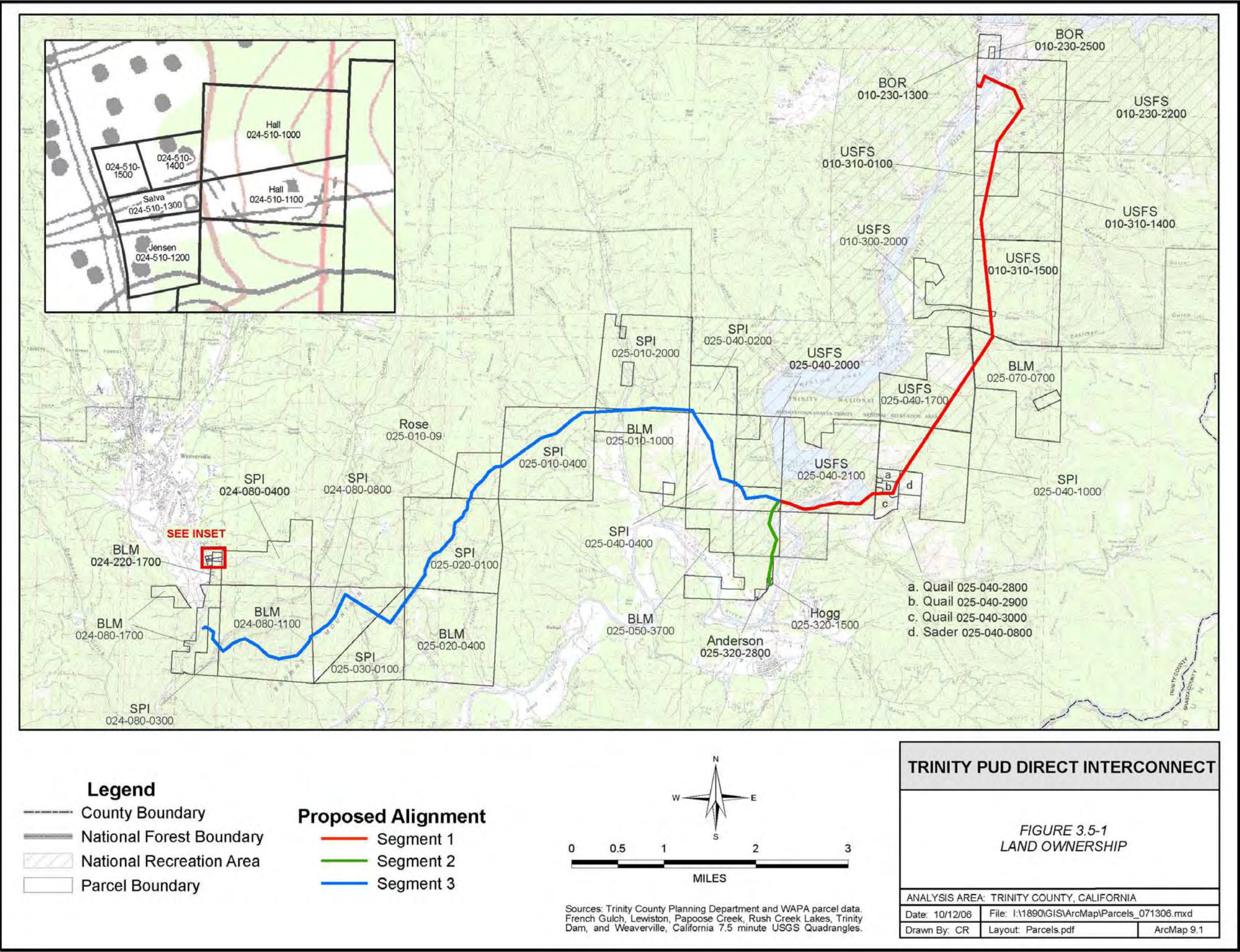


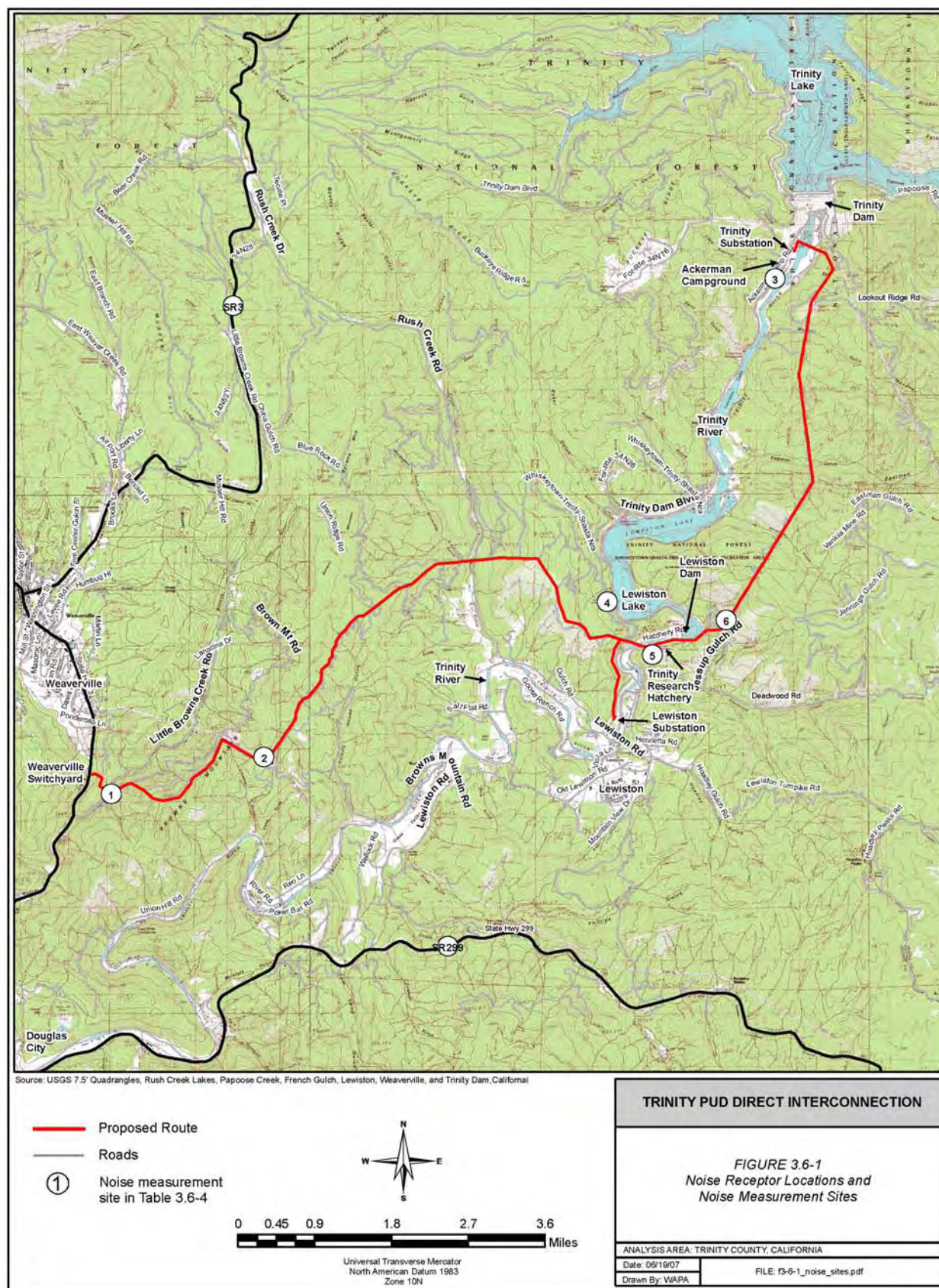
Figure 3.4-1c Geomorphic Features along the Project ROW (Segment 3)











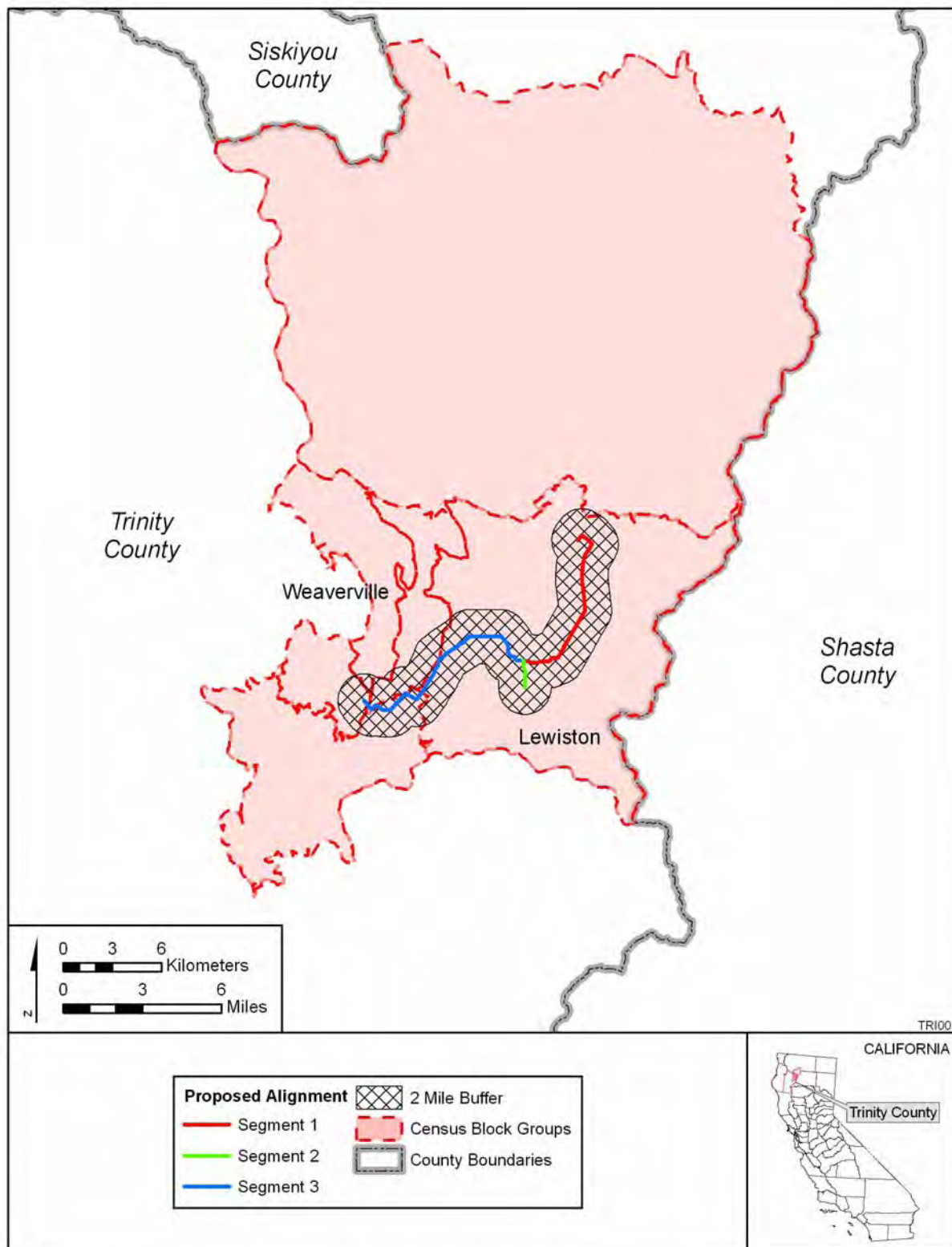
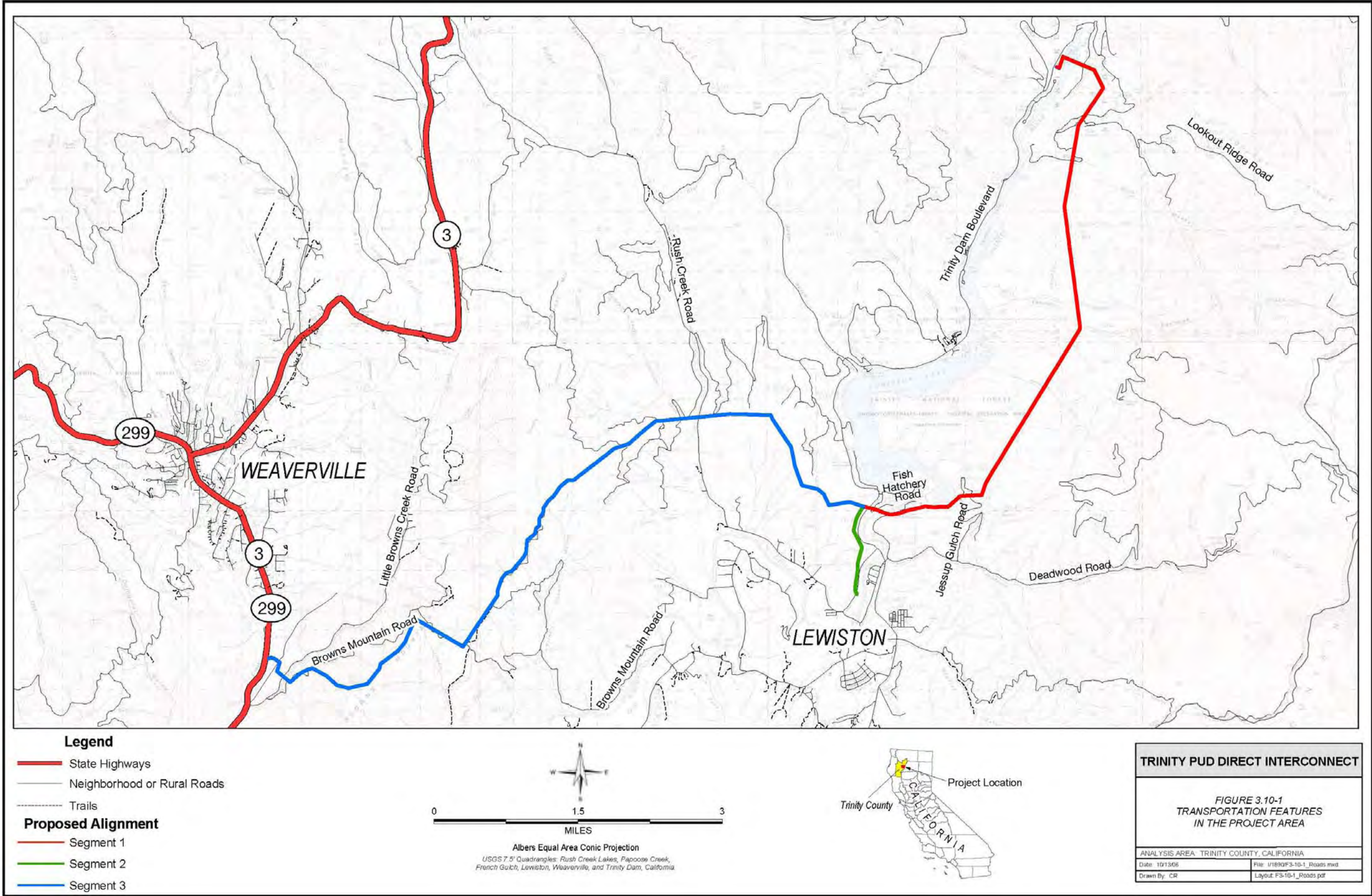
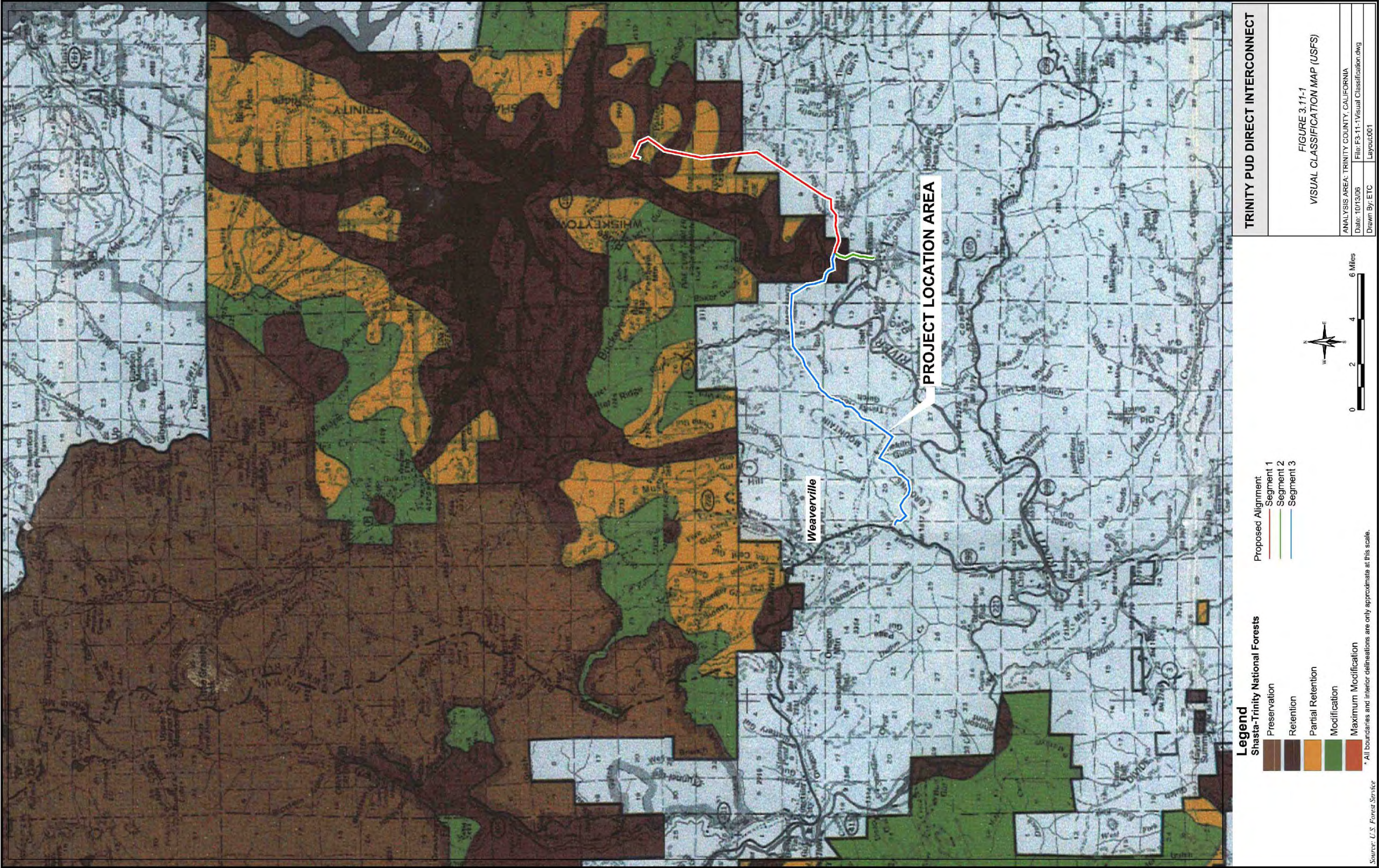
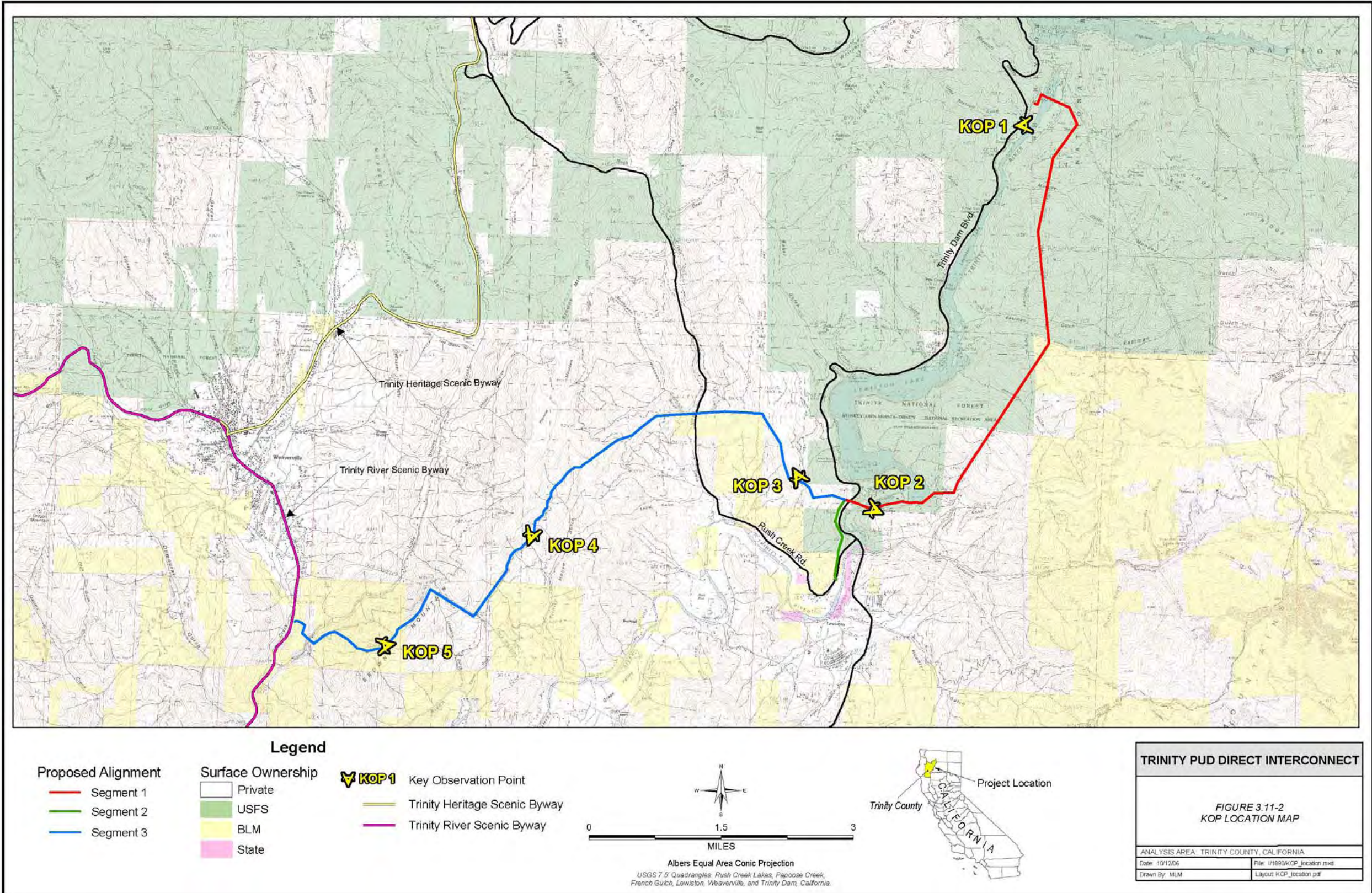


Figure 3.9-1 Trinity County Census Block Groups









KOP 1
View from the west side of the Trinity River.

TRINITY PUD DIRECT INTERCONNECT	
FIGURE 3.11-3 KOP 1	
ANALYSIS AREA: TRINITY COUNTY, CALIFORNIA	
Date: 06/28/06	File: KOPS.dwg
Drawn By: ETC	Layout: KOP 1

**KOP 2**

View of the Trinity River near the Department of Fish and Game Fish Hatchery.

TRINITY PUD DIRECT INTERCONNECT	
FIGURE 3.11-4 KOP 2	
ANALYSIS AREA: TRINITY COUNTY, CALIFORNIA	
Date: 08/26/05	File: KOPS.dwg
Drawn By: ETC	Layout: KOP 2



KOP 3

East-southeast along line and existing SPI access road.

TRINITY PUD DIRECT INTERCONNECT	
<i>FIGURE 3.11-5</i> <i>KOP 3</i>	
ANALYSIS AREA: TRINITY COUNTY, CALIFORNIA	
Date: 04/28/05	File: KOPS.dwg
Drawn By: ETC	Layout: KOP 3

**KOP 4**

North over burn area from existing road.

TRINITY PUD DIRECT INTERCONNECT**FIGURE 3.11-6
KOP 4**

ANALYSIS AREA: TRINITY COUNTY, CALIFORNIA

Date: 04/28/05

File: KOPS.dwg

Drawn By: ETC

Layout: KOP 4

