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United States Government **Department of Energy**

Bonneville Power Administration

memorandum

DATE: April 3, 2003

REPLY TO ATTN OF: KEP-4

SUBJECT: Supplement Analysis for the Transmission System Vegetation Management Program FEIS (DOE/EIS-0285/SA-138 (Raver-Echo Lake #1

TO: Don Atkinson
Natural Resource Specialist - TFN/SNOHOMISH

Proposed Action: Vegetation Management for portion of the Raver - Echo Lake #1 500 kV transmission line located from tower structure 4/1 to 13/1.

Location: Project location is within King County, Washington and is within the Snohomish Region.

Proposed by: Bonneville Power Administration (BPA).

Description of the Proposal: BPA proposes to clear targeted vegetation within the right-of-way. BPA proposes to clear along access roads and remove danger trees outside the right-of-way where appropriate. Project is to remove vegetation that may impede the operation and maintenance of the subject transmission line. See Section 1.1 through 1.4 of the attached checklists for a complete description of the proposed action.

Analysis: Please see the attached checklist for the resources present. Applicable findings and mitigation measures are discussed below.

Planning Steps:

1. Identify facility and the vegetation management need.

Work will take place along a portion of the Raver - Echo Lake #1 500 kV transmission line. The project extends between towers 4/1 and 13/1 having an easement width of 150 feet. The total project area consists of approximately 158.8 acres. It is estimated that all of the 158.8 acres be treated.

Tall growing vegetation of the types listed in Section 1.2 of the attached Checklist are present in the ROW and will soon pose a hazard to the lines. Project involves clearing tall growing vegetation and treatment of the associated stumps and re-spouts with approved herbicides to ensure that the roots are killed.

Vegetation on access roads and around tower sites that impede the operation and maintenance of the transmission line will also be cleared and/or treated.

All off right-of-way trees (danger trees) that are marked as potentially unstable, or trees that are identified that well fall within the minimum approach distance or into the safety zone of the power line will be cut as part of this project. Danger trees may be treated to prevent resprouting.

A follow-up chemical foliar treatment is scheduled within the next growing season. Control methods and requirements, as outlined in Sections 3 of the attached Vegetation Management Checklist, will be employed to mitigate any environmental effects to natural resources or to Threatened or Endangered species habitat. This vegetation management program is designed to provide a 3-5 maintenance free interval after the follow-up treatment.

2. Identify surrounding land use and landowners/managers and any mitigation.

The subject corridor traverses a mixture of private and public owned lands. Mostly rural residential, grazing and private forest lands. Line traverses the Seattle Cedar River Watershed.

A letter will be sent by mail to notify landowners in proximity to the project transmission lines prior to vegetation control activities. Personal contact along with door hangers may also be employed to notify landowners. The Prescription / Cut Sheets will be modified as needed based on input received during the project. A listing of current Landowner Agreements along the ROW can be found in Section 2.4 of the attached Checklist.

That area of the transmission line that lies within the Seattle Cedar River Watershed shall be performed in accordance with the Operational Silvicultural Prescription for the Raver – Echo Lake No. 1 500 kV Corridor Within the Cedar River Corridor. See attachment.

3. Identify natural resources and any mitigation.

Section 3 of the attached Checklist identifies the natural resources present in the area of the proposed work. The following cites resources found along with applicable mitigation measures:

Riparian Habitat:

Includes all wetlands, streams, creeks and ponds meeting the definition of riparian habitat. Riparian areas were identified which may include essential fish habitat. See Section 3.1 of the attached Checklist for a complete listing of identified water resources.

Riparian Habitat Mitigation:

- County or private lands, within 30.5 m (100 ft.) of a stream or open water. Available: all manual, spot and localized herbicide, and biological treatments, except grazing. On slopes less than 20% there will be no ground-disturbing mechanical methods employed within 35 ft. of the stream or wetland. On slopes greater than 20% there will be no ground-disturbing mechanical methods employed within the buffer.
- Within 50 ft. to edge of surface water only cut-stump and localized or spot chemical treatments using practically non-toxic to slightly toxic formulations of glyphosate, triclopyr (TEA) formulation, imazapyr, and metsulfuron-methyl (Escort). Highly toxic to very highly toxic herbicides (to aquatic species) or those herbicides containing a groundwater or surface water label advisory will not be used in this zone. Triclopyr (Garlon 4) may be used only more than 100 ft. from streams or water.

Irrigation Source, Wells, or Springs:

Includes water sources, springs, wells and other sensitive lands within 100 ft. of sensitive riparian areas or water sources. See Section 3.2 of the attached Checklist for a complete listing.

Irrigation Source, Wells, or Springs Mitigation:

- Herbicides will not be applied within 100 ft. of any irrigation water source, well, spring, or other sensitive riparian area. Only hand cutting methods are permitted within this buffer. Herbicide use is limited to those that do not have ground or suface water advisories between 100 and 165 ft of wellhead. Approved herbicides include: glyphosate, imazapyr, tryclopyr, Escort.

T & E Species:

Section 3.3 of the attached checklist presents any Threatened or Endangered Species identified in the area of the proposed work.

T & E Species Mitigation:

- **Listed Anadromous Fish:** No herbicides will be applied within 200 ft. of the waters edge of any T&E or Essential Fish Habitat listed water bodies. On slopes less than 20%, there will be no disturbance with 35 ft. of the stream or water source. On slopes greater than 20%, there will be no disturbance within 200 ft of the stream or water source. By following these mitigation measures, the proposed work will have no effect on listed anadromous fish or their essential habitat.

Cultural Resources:

No known cultural resources are present along the ROW.

Cultural Resources Mitigation:

If a site is discovered during the course of vegetation control, work will be stopped in the vicinity and the local tribe will be contacted as well as the BPA Environmental Specialist.

Steep Slopes:

See Section 3.7 of the attached Checklist for areas having a steep slope requiring vegetation management. Manual, herbicide, and biological treatments are available for treatment. Ground disturbing mechanical equipment is not allowed to clear on slopes greater than 20% except for treatment on access roads and around structures.

Spanned Canyons:

Includes areas in the corridor with a greater than 125 ft. vertical distance between the ground surface and trasmission lines. Removal is periodically required of individual trees that could encroach into the transmission corridor danger zone. See Section 3.8 of the attached Checklist for a listing of such areas along the ROW.

4. Determine vegetation control and debris disposal methods.

Vegetation will be removed using manual, mechanical, and chemical methods. Glyphosate, triclopyr (Garlon 3A and 4), imazapyr, and dicamba may be used for cut-stump, stem-injection, and basal-stem treatments. Metsulfuron methyl (Escort) and clopyralid may also be used for spot foliar and broadcast treatments. 2,4-D amine may be used for noxious weed species.

Debris will either be disposed on-site or trucked off-site using either chip, lop and scatter, or mulch techniques as described in Section 5 of the attached checklists.

5. Determine revegetation methods, if necessary.

Re-vegetation is not planned for this project. However, if soil disturbance occurs during the project, the area will be reseeded.

6. Determine monitoring needs.

The project area will be inspected during treatment. In addition, it will be reviewed during routine patrols by the line crew and within one year by the NRS.

7. Prepare appropriate environmental documentation.

Findings: This Supplement Analysis finds that 1) the proposed actions are substantially consistent with the Transmission System Vegetation Management Program FEIS (DOE/EIS-0285) and ROD, and; 2) there are no new circumstances or information relevant to environmental concerns and bearing on the proposed actions or their impacts. This Supplement Analysis also finds the proposed actions will not affect threatened or endangered species. Therefore, no further NEPA or ESA documentation is required.

/s/ Mark Martin
Mark Martin
Environmental Protection Specialist

CONCUR*/s/ Thomas C. McKinney* DATE:04/17/2003
Thomas C. McKinney
NEPA Compliance Officer

Attachment

cc:
L. Croff – KEC-4
T. McKinney – KEC-4
C. Leiter – KEP-4
J. Meyer – KEP-4
M. Martin – KEPR/COVINGTON
P. Key – LC-7
D. Hollen – TF/DOB-1
A. De La Cruz – TFN/SNOHOMISH
L. Alvarez – TFN/SNOHOMISH
R. Sweet – TFNF/SNOHOMISH
Environmental File – KEC-4
Official File – KEP (EQ-14)

Mmartin:mm:4722:4/3/2003 (KEP-KEPR/COVINGTON-W:\EP\2002 & 2003 FILES\EQ\EQ-14\FEIS-0285-SA-138-Raver- Echo Lake (4-11).doc)

Vegetation Management Checklist

Raver – Echo Lake No.1
4/1 to 13/1 mile

Prepared By: **Don Atkinson**
Natural Resource Specialist
January 27, 2003

1. IDENTIFY FACILITY AND THE VEGETATION MANAGEMENT NEED

1.1 Describe Right-of-way.

See Handbook — **List of Right-of-way Components** for checkboxes and the requirements for the components **Rights-of-way**, **Access Roads**, **Switch Platforms**, **Danger Trees**, and **Microwave Beam paths**.

Corridor Name	Corridor Length & kV	Easement width	Miles of Treatment
Raver – Echo Lake No. 1	4/1 to 13/1 500kv	150’	Approx. 9 miles

Right Of Way:

Right-Of-Way – Clearing trees and brush within the right-of-way and treating with herbicides. The right-of-way will be treated using selective and non-selective methods that include hand cutting, mowing and herbicide treatments. Herbicide treatments will include spot treatment (stump treatment, basal treatment, and/or spot foliar), or localized treatments (including broadcast application and cut stubble treatments). The total project area consists of approximately 158.8 acres. It is estimated that all 158.8 acres of the project area will be treated.

Access Road Clearing – Approximately 12 miles of clearing using selective and non-selective methods that include hand cutting, mowing and herbicide treatments.

Transmission Structures – Approximately 47 tower sites will be treated using selective and non-selective methods that include hand cutting, mowing and herbicide treatments. The herbicide treatments include spot (cut stump or basal treatment), localized and broadcast applications including cut stubble treatments.

Clearing Requirements:

- Control all tree and brush species within about 30 ft. of transmission structures. Cut stumps are not to be taller than 2 – 4 inches.
- Pull all debris and slash out of the 30-ft. area around transmission structures.
- Access Road Clearing Requirements: - (there are approximately 10 miles of machine and hand cutting)
- Control all vegetation except grasses, to enable safe driving.
- The access road is to be 14 to 25 ft. wide with a 15-ft.- high clearance. Limbs should not hang down into the access road.
- Cut stumps are not to be taller than 2 – 4 inches in the roadbed.
- Cut stumps horizontal to the ground to prevent personal injuries and tire puncture.
- Trim limbs back as flush to the trunk as possible when trees are rooted outside of the access road.
- Pull all debris back from the access road as prescribed.
- Cut stumps horizontal to the ground to prevent personal injuries and tire puncture.
- Trim limbs back as flush to the trunk as possible when trees are rooted outside of the access road.
- Pull all debris back from the access road as prescribed.

Reclaim ("C") Trees – C trees will be cut as part of this project.

Danger Trees (off right-of-way): – All off-right-of-way trees (danger trees) that are marked as potentially unstable, or trees that are identified during the project, that would fall within the minimum approach distance (MAD) or into the safety zone of the power line, will be cut as part of this project. Danger trees may be treated with herbicides to prevent resprouting.

1.2 Describe the vegetation needing management.

See handbook — List of Vegetation Types, Density, Noxious Weeds for checkboxes and requirements.

Vegetation Types:

Western Red Cedar

Douglas fir

Grand fir

Hemlock

Alder

Willows – mid span or where ground to conductor clearance is low

Cottonwoods

Scotch broom – along access roads and around structures or mid span where ground to conductor clearance is low. All scotch broom within the Cedar River Watershed will be treated.

Blackberries - along access roads and around structures or mid span where ground to conductor clearance is low

Density: The density is variable through the project and ranges from Low (50 stems or less per acre) to as High (250 + stems per acre).

1.3 List measures you will take to help promote low-growing plant communities. If promoting low-growing plants is not appropriate for this project, explain why.

See Handbook — for requirements and checkboxes.

Vegetation that will grow tall will be selectively eliminated before it reaches a height or density to begin competing with low-growing species. Desirable low-growing plants will not be disturbed. Only selective vegetation control methods that have little potential to harm non-target vegetation will be used.

Cut-stump or follow-up spot herbicide treatments on species that re-sprout will be carried out to ensure that the roots are killed (follow-up treatment may take place during the next growing season). Herbicides will not be applied using high volume methods to ensure that non-target species are not treated. Note: No herbicides will be used within the Cedar River Watershed (CRW).

1.4 Describe overall management scheme/schedule.

See Handbook - Overall Management Scheme/Schedule.

Description of the Proposed Action: The project consists of clearing unwanted vegetation within the right-of-way, around structures, and along access roads that may impede the operation and maintenance of the subject transmission line. All work will be in accordance with the National Electrical Safety Code and BPA standards.

It is the goal of this project to remove the tall growing vegetation that is currently or will soon be a hazard to the transmission line. The overall goal is to develop low-growing plant communities within the right-of-way.

Initial entry – Using hand cutting or mechanical mowers, BPA will complete brush management activities on the right-of-way, access roads and towers sites, chemically treat stumps and stubbles with herbicides (spot, localized, and broadcast treatments) to ensure that the roots are killed preventing new sprouts and selectively eliminating vegetation that prevents access to the power lines. Areas may be replanted or re-seeded with low-growing vegetation or grasses if there is limited vegetation for re-establishment of the site. Cut, lop and scatter, and stump treatment (where possible to prevent re-sprouting) are the preferred methods on State and Private lands. Areas where densities are high, or that have a lot of Scotch Broom and /or blackberries will be mowed using a track mounted mowing head. Access roads and structure sites will also be mowed and chemically treated. Note: No herbicides will be used in the CRW.

Subsequent entries – Follow-up/re-treatment, within the right-of-way, around structure sites, and along access roads, is planned within the next growing season. This will be done with herbicides in areas that were not treated due to adverse weather conditions, there was not a good kill, or that were not treated in the initial entry. Note: No herbicides will be used in the CRW.

Future cycles – This area is being managed on a 3 to 5 year maintenance free cycle for brush and danger trees. During routine patrol, the right-of-way will be examined for tall growing trees on the right-of-way and danger trees (DT's) off the right-of-way. The overall vegetation management scheme will be to cut and treat all encumbering vegetation on the right-of-way using a combination of manual, mechanical and herbicide treatments as outlined in the initial treatment every 3 to 5 years. Note: No herbicides will be used in the CRW.

2. IDENTIFY SURROUNDING LAND USE AND LANDOWNERS/MANAGERS

2.1 List the types of landowners and land uses along your corridor.

See Handbook — **Landowners/Managers/Uses** for requirements, and **List of Landowners/Managers/Uses** for a checkbox list.

Seattle Cedar River Watershed, private landowners (rural residential, farms, grazing land) and private forest lands.

2.2 Describe method for notifying right-of-way landowners and requesting information (i.e., door hanger, letter, phone call, e-mail, and/or meeting). Develop landowner mail list, if appropriate.

See Handbook — **Methods for Notification and Requesting Information** for requirements.

Letters or Personal contact by BPA and/or the Contractor along with door hangers. This will be done before and during the project. The Prescription/Cut Sheets will be modified as needed based on any input received during the project.

2.3 List the specific land owner/land use measures — determined from the handbook or through your consultations with the entities — that will be applied.

See handbook — **Requirements and Guidance for Various Landowners/Uses** for requirements and guidance, also **Residential/Commercial**, **Agricultural**, **Tribal Reservations**, **FS-managed lands**, **BLM –managed lands**, **Other federal lands**, **State/ Local Lands.**.

The ROW within the CRW will be managed per the attached Silvicultural Prescription for the CRW.

2.4 Review any existing landowner agreements (e.g. tree/brush Permits or Agreements). List in table above any provisions that need to be followed and where they are located.
See handbook — **Landowner Agreements** for requirements.

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Landowner/use	Specific measures to be applied
From	To		
4/4 + 160	4/4 + 830	Tree & Brush Agreement – Brunette & Paul	Landowner will maintain
4/4 + 830	9/4 + 606	Cedar River Watershed	No Herbicide Treatment Area

2.5 List any known casual informal use of the right-of-way by non-owner publics. List any constraints or measure's to take due to the informal use.
See handbook — **Casual Informal Use of Right-of-way** for requirements.

None Known

2.6 List other potentially affected people, agencies, or tribes (that are not landowners/managers) that need to be notified or coordinated with. Describe method of notification and coordination.
See handbook — Other Potentially Affected Publics for requirements and suggestions.

Muckleshoot Tribe

3. IDENTIFY NATURAL RESOURCES
See Handbook — **Natural Resources**

3.1 List any water resources (streams, rivers, lakes, wetlands) that may be impacted by vegetation control activities. For each water body describe the control methods and requirements or mitigation measures that will be used.
See Handbook — Water Resources for requirements for working near water resources including buffer zones.

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Waterbody	T&E?	Treatment Zone	Herbicide	Application Technique	Buffer	Other
From	To							
4/2 + 120	4/2 + 660	Creek	No	Riparian	See below	See below	See below	
5/4 + 490	5/4 + 1370	Cedar River	No	Riparian	See Below	See below	See below	
6/5 + 00	6/5 + 1100	Creek	No	Riparian	See below	See below	See below	
7/1 + 300	7/1 + 850	Creek	No	Riparian	See below	See below	See below	
7/1 + 1300	7/3 + 00	Wetland	No	Riparian	See below	See below	See below	
7/3 + 60	7/4 + 70	Wetland	No	Riparian	See below	See below	See below	

7/5 + 90	8/3 + 810	Wetland, Creek, & Spring	No	Riparian	See below	See below	See below	
8/4 + 140	8/4 + 580	Wetland	No	Riparian	See below	See below	See below	
8/5 + 300	8/5 + 630	Creek	No	Riparian	See below	See below	See below	
9/1 + 00	9/1 + 540	Creek	No	Riparian	See below	See below	See below	
9/3 + 480	9/4 + 50	Wetland	No	Riparian	See below	See below	See below	
9/4 + 290	9/5 + 00	Creek	No	Riparian	See below	See below	See below	
9/5 + 340	9/5 + 750	Creek	No	Riparian	See below	See below	See below	
9/6 + 230	9/6 + 440	Creek	No	Riparian	See below	See below	See below	
10/1 + 1000	10/2 + 310	Creeks & Wetlands	No	Riparian	See below	See below	See below	
10/3 + 40	11/1 + 640	Creeks & Wetlands	No	Riparian	See below	See below	See below	
11/2 + 300	11/3 + 370	Wetland	No	Riparian	See below	See below	See below	
11/3 + 550	11/4 + 00	Wetland	No	Riparian	See below	See below	See below	
11/4 + 260	12/1 + 930	Wetlands	No	Riparian	See below	See below	See below	
12/2 + 00	12/2 + 970	Raging River	Yes	Riparian T&E	See below	See below	See below	Anadromous Fish
12/2 + 970	12/2 + 1020	Wetland	No	Riparian	See below	See below	See below	
12/3 + 290	12/6 + 50	Creek & Wetland	No	Riparian	See below	See below	See below	

Riparian	**RIPARIAN**: County or private lands, within 30.5 m (100 ft.) of a stream or open water. Available: all manual, spot and localized herbicide, and biological treatments, except grazing. On slopes less than 20% there will be no disturbance within 35ft. of the stream or wetland. On slopes greater than 20% there will be no disturbance within the buffer.

	Herbicides: Within 50 ft. of a stream, only cut-stump and localized treatments using practically toxic or Slightly toxic formulations of glyphosate, imazapyr, and Escort can be used up to the waters edge. Highly Toxic and very highly toxic (to fish) herbicides will not be used in this zone. Triclopyr (Garlon 4) may be used only more than 100 ft. from streams or water. See Table 111-1: Buffer width to Minimize Impacts on non-target Resources. (Transmission Vegetation Management EIS)
Riparian T&E	**RIPARIAN SALMON**: BPA, county, or private lands, within 61 m (200 ft.) of a listed salmon stream. Available: all manual, spot and localized herbicide, and biological treatments, except grazing. On slopes less than 20% there will be no disturbance within 35ft. of the stream or wetland. On slopes greater than 20% there will be no disturbance within the buffer. **Herbicides**: No herbicides within 200 feet from the waters edge. From 100 to 200 feet away for stream or water, Escort, clopyralid, imazapyr, practically toxic or Slightly toxic formulations of glyphosate, and triclopyr (Garlon 3A) can be used. Highly Toxic and very Highly toxic (to fish) herbicides will not be used in this zone. Glyphosate, and triclopyr (Garlon 3A) can be used. See Table 111-1: Buffer width to Minimize Impacts on non-target Resources. (Transmission Vegetation Management EIS)

3.2 If planning to use herbicides, list locations of any known irrigation source, wells, or springs (landowners maybe able to provide this info if requested).

See Handbook — **Herbicide Use Near Irrigation, Wells or Springs** for buffers and herbicide restriction

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Wells, Irrigation or Springs	Treatment Zone	Buffer
From	**To**			
4/4 + 830	9/4 + 606	Cedar River Watershed	Non Herbicide Area	Whole right-of-way
8/3 + 00	8/3 + 810	Spring	Non Herbicide Area	100 ft. radius around spring
NON-HERB	**NON-HERBICIDE AREAS** Water sources, springs, wells and other sensitive lands within 100 feet of sensitive Riparian areas or water sources. Hand Cutting Methods only, no Herbicides allowed. WELLS: No herbicides allowed within 100 feet of wellhead. Use only herbicides that do not have ground or surface water advisories between 100 and 165 feet of wellhead. Approved herbicides include: glyphosate, imazapyr, tryclopyr, Escort,			

3.3 List below the areas that have Threatened or Endangered Plant or Animal Species and the name of the species, and any special measures that need to be taken due to their presence. Attach any BAs, T&E maps, or letters from US Fish and Wildlife.

See Handbook — **T&E Plant or Animal Species** for requirements and determining presence.

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Threatened or Endangered Plant or Animal Species	Method/mitigation measures
To	From		
12/2 + 00	12/2 + 930	Anadromous Fish– Raging River	See Below
9/6	9/7	Lynx	Per Gene Lynard, Lynx shown on the Washington National Heritage Listing does not exist – this is not within lynx habitat.
Riparian T&E	**RIPARIAN T&E**: BPA, county, or private lands, within 61 m (200 ft.) of a listed salmon or bull trout stream. Available: all manual, spot and localized herbicide, and biological treatments, except grazing. No mechanical treatments except along access roads and around structures. On slopes less than 20% there will be no disturbance within 35ft. of the stream or wetland. On slopes greater than 20% there will be no disturbance within the buffer. **Herbicides**: No herbicide treatments allowed within the buffer zone.		

3.4 List any other measures to be taken for enhancing wildlife habitat or protecting species.

See Handbook — **Protecting Other Species** for requirements.

None mapped. Also, any areas in the corridor with ground to conductor clearances greater than 38.1 m (125 ft.) vertical distance will be select tree cut. This will help provide shade for salmon and other fish.

3.5 List any visually sensitive areas and the measures to be taken at these areas.

See Handbook — **Visual Sensitive Areas** for requirements.

None known within the project area.

3.6 List areas with cultural resources and the measures to be taken in those areas.

See Handbook – **Cultural Resources** for requirements.

None known within the right-of-way.

3.7 List areas with steep slopes or potential erosion areas and the measure and methods to be applied in those areas.

See Handbook – **Steep/Unstable Slopes** for requirements. See attached maps for exact locations.

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Describe sensitivity	Method/mitigation measures
From	To		
5/4 + 110	5/4 + 1530	Steep slope	See below
6/2 + 350	7/3 + 1150	Steep slope	See below
8/1 + 580	11/4 + 795	Steep slope	See below
12/2 + 80	12/2 + 160	Steep slope	See below

12/2 + 780	12/2 + 970	Steep slope	See below
Resource	**Treatment Alternatives**		
SS	BPA Fee owned State DNR, or private lands where a steep slope or visual resources precludes mechanical treatments except on access roads and around structures. Available: all manual and biological treatments. All herbicide treatments including cut-stubble treatment following a mechanical treatment on access roads and structure sites. **Herbicides:** glyphosate, triclopyr (Garlon 3A and 4), imazapyr, dicamba may be prescribed for cut-stump, stem-injection, and basal-stem treatments. In addition to the above herbicides, Escort, and clopyralid can be used spot foliar and broadcast treatments. 2,4-d amine can be added to the list to control noxious weed species. See Table 111-1: Buffer width to Minimize Impacts on non-target Resources. (Transmission Vegetation Management EIS)		

3.8 List areas of spanned canyons and the type of cutting needed.

See Handbook – **Spanned Canyons** for requirements.

Raver – Echo Lake No. 1 (See attached maps for locations)

Span		Describe sensitivity	Method/mitigation measures
From	**To**		
12/2 + 160	12/2 + 780	Select Tree Cut	See below
Resource	**Treatment Alternatives**		
STC	Any areas in the corridor with greater than 38.1 m (125 ft.) vertical distance between the ground surface and transmission lines. Here, removal is periodically required only of individual trees (single tree cuts) that could encroach into the transmission corridor danger zone. **Herbicides:** None.		

4. DETERMINE VEGETATION CONTROL METHODS

See Handbook — **Methods**

4.1 List Methods that will be used in areas not previously addressed in steps above.

See Handbook — **Manual, Mechanical, Biological, and Herbicides** for requirements for each of the methods.

MANUAL: Manual control methods include the following: cutting with shears, clippers, or chainsaws; and girdling by cutting a ring around the tree. When chainsaws are used cut conifers below the lowest live limb to eliminate continued growth of the lateral branches and cut all stumps flat where possible.

MECHANICAL: Mechanical methods include the use of brush mowers and feller bunchers. Ground-disturbing mechanical equipment will not be used on slopes over 20% or in riparian areas (Refer to 3.1). Work will be done when the ground is sufficiently dry enough to sustain heavy equipment and minimize excessive rutting.

HERBICIDES: The herbicide treatments prescribed for the project area are spot stump treatment, localized basal treatment, and localized foliar treatment. Where possible the deciduous stumps will be treated to prevent resprouting. If we are unable to treat the stumps during the project, we will wait until the next growing season and do a localized foliar treatment. In areas where the trees are less than 6ft. tall and the density is light we may do a localized basal treatment.

PROPOSED HERBICIDES*:* Glyphosate, triclopyr (Garlon 3A and 4), imazapyr, and dicamba may be prescribed for cut-stump, stem-injection, and basal-stem treatments. In addition to the above herbicides, Escort, and clopyralid can be used for spot foliar and broadcast treatments. 2,4-d amine may be added to the list to control noxious weed species. See Tables 111-1: Buffer width to Minimize Impacts on non-target Resources, and 5-7: Herbicide Ecological Toxicities and Characteristics. (Transmission Vegetation Management EIS).

SEE CUT SHEET FOR CONTROL METHODS

5. DETERMINE DEBRIS DISPOSAL AND REVEGETATION

5.1 Describe the debris disposal methods to be used and any special considerations.

See Handbook — **Debris disposal** for a checkbox list and requirements.

Mulching/Mowing – This will be done on access roads and around structure sites.

Lope and Scatter – These areas are identified in the VEGETATION CONTROL PRESCRIPTION as Cut, Lope, and Scatter.

Some areas may require that the brush be chipped. These areas are identified in the VEGETATION CONTROL PRESCRIPTION as cut and treat as needed, and will depend on the requirements of the landowners.

5.2 List areas of reseeding or replanting (those areas not already described in steps 1, 2, or 3).

See Handbook — **Reseeding/replanting** for requirements.

Not planned at this time. However, if soil disturbance occurs during the project the area will be reseeded. Areas within the CRW may be planted with native low growing shrubs, forbs, and/or grasses to reduce the spread of noxious weeds.

5.3 If not using native seed/plants, describe why.

Native seed will be considered in all mixes. Introduced species may be more competitive against invading tree species and protecting against erosion.

5.4 Describe timing and any follow-up that will need to take place to ensure germination/success of seeding/planting.

Not planned at this time. However, if reseeding is necessary it will take place in the fall just before the fall rains.

6. DETERMINE MONITORING NEEDS

See handbook — Monitoring for requirements.

6.1 Describe the follow-up/monitoring cycle that will be used to evaluate the effectiveness of the vegetation control methods used.

The project area will be inspected during and immediately after treatment. In addition, it will be reviewed during routine patrols by the line crew and within one year by the NRS.

6.2 Describe any follow-up or monitoring needed to determine if mitigation measures were effective.

Will review during line patrol by the line crew and within one year by the NRS.

7. PREPARE APPROPRIATE ENVIRONMENTAL DOCUMENTATION

See handbook — **Prepare Appropriate Environmental Documentation** for requirements.

7.1 Describe any potential project impacts or project work that are different than those disclosed in the Transmission System Vegetation Management Program EIS. Describe how those differences impact natural resources and if the differences are "substantial".

Effects are expected to be the same or less than the description provided in the EIS.

7.2 Is there a need for additional NEPA documentation (i.e. Forest Service requirement, Record of Decision, supplemental EIS)? If so, attach.

No