

Environmental Assessment

Midstate Electric Cooperative, Inc. Power Line Relocation

Bend-Fort Rock Ranger District, Deschutes National Forest
Deschutes County, Oregon

ALTERNATIVES

ALTERNATIVE 1 – NO ACTION

ALTERNATIVE 2 – PROPOSED ACTION

ALTERNATIVE 3

ALTERNATIVE 4 – PREFERRED

ALTERNATIVE 5

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ENVIRONMENTAL ASSESSMENT MIDSTATE ELECTRIC COOPERATIVE, INC. POWER LINE RELOCATION PROJECT

DOCUMENT STRUCTURE

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This environmental assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. This Environmental Assessment is organized into four chapters:

Chapter 1 - Introduction: Includes information on the history of the project proposal, the purpose of and need for the project, the agency's proposal for achieving that purpose and need, and public involvement.

Chapter 2 - Alternative Discussion: Provides a description of the alternatives for achieving the stated purpose. Alternatives were developed based on issues raised by the public and Forest Service. A comparison table of the activities of each alternative is included. Mitigation measures, Best Management Practices, and Project Design Criteria that would prevent adverse effects to the environment, through alternative implementation, are listed.

Chapter 3 – Affected Environment and Environmental Consequences: Describes the affected environment (existing condition) of each resource and the effects each alternative would have on the environment. The effects of the No Action Alternative provide a baseline for evaluation and comparison with the other alternatives.

Chapter 4 - Agencies and Persons Consulted: Provides a list of preparers and agencies consulted during the development of the environmental assessment.

CHAPTER 1 – INTRODUCTION

SUMMARY

The purpose of this document is to display the effects of the proposed action and the various alternative methods of addressing the purpose and need and issues identified for this EA. It documents an environmental analysis of the alternatives including the No Action Alternative.

The Bend-Fort Rock Ranger District of the Deschutes National Forest, Oregon, is considering a request made by Midstate Electric Cooperative, Inc. (Midstate) to reroute a portion of an existing power line. The proposed activities would occur within the following management areas as designated by the Deschutes National Forest Land and Resource Management Plan, 1990 (LRMP): Deer Habitat, Scenic Views and Intensive Recreation. The proposed activities would occur within portions of:

- Deer winter range.
- The Ryan Ranch Key Elk area east of the Deschutes River.
- The Cascade Lakes National Scenic Byway (Highway 46).

The proposed vegetative treatment activities presented in Alternative 2 (Proposed Action) would create a 30-foot wide corridor for the power line, and would focus on minimizing impacts to the landscape. In addition to the four action alternatives, the “No Action” Alternative was fully developed and analyzed as a baseline for comparison.

An Interdisciplinary Team (IDT) conducted a site-specific environmental analysis. This analysis is supported by reports and background material from resource professionals.

Forest Service Manual 2703 directs that an authorized officer may deny a special use proposal if it “can reasonably be accommodated on non-NFS lands...”. It also directs decision makers not to authorize a special use of National Forest System lands (NFS lands) “just because it affords the applicant a lower cost and less restrictive location when compared with non-National Forest System lands.” Further guidance on this subject was issued in a January 2003 Forest Service Washington Office memorandum, which acknowledges the preceding direction. It also further directs decision makers to consider the differences in the environmental, social, and economic effects between constructing an energy project or facility on non-NFS lands as opposed to where it is being proposed on NFS lands. This document provides information that will be used to make the decision about whether to deny or approve the proposed use and occupancy of NFS lands.

PROJECT AREA LOCATION

The project area is located just north of the Cascade Lakes National Scenic Byway (Highway 46), near the Inn of the Seventh Mountain, approximately three miles southwest of Bend, Oregon. The project lies within portions of Township 18 South, Range 11 East, Sections 10, 11, 14, 15 & 22 Willamette Meridian (see Map 1). The proposed project area is located in Scenic Views Management Area 9, Deer Habitat Management Area 7 and Intensive Recreation Management Area 11, as designated under the LRMP. The project area boundaries are Road 4610 to the west, Road 4601 to the north, the Forest boundary to the east, and Highway 46 and existing power line to the

south and includes approximately 4,900 acres. The area is located east of the Northwest Forest Plan boundary line and lies outside the range of the northern spotted owl.

BACKGROUND

The Midstate Electric Cooperative, Inc. Power Line Relocation Environmental Assessment project (hereinafter referred to as the EA) is designed to analyze effects of relocating the power line from the existing location to locations that lie north and west of the present route (Maps 2 to 6). It addresses the effects of rerouting the existing power line, and the character and function of the power line corridor in regards to past, present and future use as public land. The existing power line serves as a back up loop to other portions of the Midstate infrastructure and does not remain charged at all times.

The Bend-Fort Rock Ranger District of the Deschutes National Forest is analyzing vegetation within the Midstate Electric Cooperative, Inc. Power line Relocation project area, as it occurs within the East Tumbull planning area. The project area lies outside the area of the Northwest Forest Plan (NWFP) boundaries. There are no wetlands or fisheries within the project area. There are no inventoried roadless areas within or adjacent to the project area. There would be no change to the unroaded or undeveloped character as defined by the current proposed rule for roadless areas. The project area has been previously roaded, logged, and has existing skid trails and landings.

The majority of the project area is closed to vehicles during winter, as part of a Memorandum of Understanding with the Oregon Department of Fish and Wildlife. This cooperative agreement is designed to reduce vehicular harassment of wildlife and provide resource protection and will continue to be enforced.

There are no known Threatened, Endangered or Sensitive species in the project area.

PURPOSE AND NEED FOR ACTION

The Bend-Fort Rock Ranger District received an “Application for Transportation and Utility Systems and Facilities on Federal Lands” from Midstate. This application proposes to reroute a portion of an existing 69-kV power line. The power line currently crosses NFS lands and two separate parcels of private land. Additionally, this power line is over 50 years old, and poles need to be replaced, as it was originally designed to function reliably for 30 years.

The primary purposes for relocating the power line are to address a Special Use Permit request from Midstate, who had received a request to remove their line from private lands; to replace the infrastructure on this portion of the line in anticipation of future upgrades of this line; and to reduce the number of crossings of and upgrade the scenic views along Highway 46 and to minimize or remove power line impacts within the Cascade Highlands development.

Alternative locations across the Deschutes National Forest were reviewed and considered for this project. Field reconnaissance in 2004 identified four routes that fit most of the above criteria. These routes are all within the same general area; however, there are some differences in specific locations between routes (see Maps 3 to 6).

ALTERNATIVE 2 (PROPOSED ACTION)

This route is shown in Map 3. It begins on the south side of Highway 46 and terminates at a location to the north in Section 11. This route diverges from the existing route just south of Highway 46 in the southwest corner of Section 22.

This action would consist of constructing a power line corridor for approximately 3.5 miles. Heavy equipment needed would include: a grapple piler, a bulldozer, large trucks for removing logs and hauling power poles, line truck for power auger, and flatbed truck to haul conductor line and supplies. The right-of-way will be 30 feet wide. Trees would be removed from approximately 12.6 acres. Construction would consist of: clearing trees, drilling 10-foot deep holes to install wooden utility poles (average height of pole is 70 feet), and installation of the conductor wire. Maintenance access would be limited to a primitive road for a pick-up truck to patrol the right-of-way. The line would be single pole construction with no cross arms. Guy wires would be needed at angel points (estimated to be two locations). Additionally, approximately 3.5 miles of existing power line would be removed from federal and private land.

The Forest Service proposes to address the purpose and need by meeting 3 objectives:

1. Develop alternatives that would relocate the power line from its current route.
2. Minimize the impacts of the new power line route to National Forest land.
3. Minimize potential conflicts with other users and resources of the National Forest.

Project implementation would begin in fiscal year 2006. The proposed project activities would be completed by winter 2007.

No permanent system roads would be created. Trees that may be removed as a result of this project may be made available for stream restoration projects in Tumalo Creek.

All measurements in this document are approximate.

DOCUMENTS TIERED TO AND MANAGEMENT DIRECTION

This section lists signed documents that are tiered to and provides a discussion of each document regarding management allocations and direction. The alternatives of the project respond to the goals and objectives, standards and guidelines described for the areas in:

Deschutes National Forest Land and Resource Management Plan (*Forest Plan as amended, 1990*) and its accompanying Final Environmental Impact Statement as amended by the Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (Eastside Screens): “The National Forest Land and Resource Management Plan (Forest Plan or Plan) was developed to guide all natural resource management activities and establish standards/guidelines for the Deschutes National Forest. The purpose of the plan is to provide for the use and protection of Forest resources, fulfill legislative requirements, and address local, regional, and national issues and concerns.” Following is a brief summary of the goals in each Management Area (MA) located within the planning area (also see Map 8):

- **Deer Habitat (MA-7):** Manage vegetation to provide optimum habitat conditions on deer winter and transition ranges while providing some domestic livestock forage, wood products, visual quality and recreation opportunities.
- **Scenic Views (MA-9):** Provide Forest visitors with high quality scenery that represents the natural character of Central Oregon.
- **Intensive Recreation (MA-11):** Provide a wide variety of quality outdoor recreation opportunities within a forest environment. This MA is located south of the Cascade Lakes Highway, between the highway and the existing power line location.

Table 1. Management Areas (MA) within the Midstate Electric Inc., Power Line Relocation Project Area, acres for each MA and Percent of Project Area.

MANAGEMENT AREA	ACRES (approximate)	PERCENT OF PROJECT AREA (approximate)
Deer Habitat MA-7	3,750	76 %
Scenic Views MA-9	920	19%
Intensive Recreation MA-11	230	5%
TOTAL	4,900	100 %

DECISION TO BE MADE

Based on this environmental assessment, resource specialists reports and biological evaluations, the Forest Supervisor of the Deschutes National Forest, will decide whether to implement the Midstate Electric Cooperative, Inc. Power Line Relocation Project and if so, where and under what conditions.

DOCUMENTS INCORPORATED BY REFERENCE

- **1998 Deschutes National Forest Integrated Fuels Management Strategy (IFMS):** “The IFMS provides guidance for prescribed fire, mechanical brush mowing, and small diameter tree thinning and release.” “The IFMS Recommended Strategic Actions are not required to implement the natural fuels activities, but were developed to assist the Forest with program development towards meeting long term goals in an integrated, adaptable and effective manner.”
- **1998 Deschutes National Forest Noxious Weed EA:** “Integrated Weed Management Plan (IWMP)”. IWMP provides direction for the management and control of noxious weeds on the Deschutes National Forest.
- **Project Record: Midstate Electric Cooperative, Inc. Power Line Relocation EA** – Includes all specialists reports used to prepare EA.

SCOPING AND PUBLIC INVOLVEMENT

The scoping process identifies public, Forest Service and other agencies’ issues regarding a proposal to implement an action. Public scoping was initiated by including this project in the fall 2004 edition of the Schedule of Projects (SOP) for the Ochoco and Deschutes National Forests and the Prineville District of the Bureau of Land Management. A scoping letter was also mailed to public parties potentially interested in this project on November 19, 2004. Public comments were

used by the IDT to identify issues, further develop the proposed action and develop alternatives to the proposed action.

Comments Received from the Public

Written responses to the initial scoping letter were received from three individuals and one government agency regarding the routes proposed for the power line relocation. None of the comments were supportive of the proposed action alternative. All expressed concern about negative impacts to National Forest System lands resulting from the creation of a new corridor for the power line. Several telephone comments were also received.

Issues

The public comments received were used to focus the analysis in areas where the public desired a specific resource to be addressed. All comments received have been assessed as to their relevance to each of the resources being addressed within the project area. Some of the comments have been addressed in the Proposed Action, alternative development, and analysis of the effects of actions. These comments were used to formulate issues and to design alternative activities and mitigations. Some comments were used to explore alternatives that were not further developed. Internal Forest Service comments and analysis were also used in the development of alternatives.

‘Key’ issues are issues used to develop alternatives or specific activities of the action alternatives. The following key issues and concerns were the basis for designing additional alternatives other than the Proposed Action. Each key issue statement is followed by a more detailed explanation. Each key issue has a unit of measure developed to help distinguish between each alternative and how it responds to the issue. A comparison of the alternatives is discussed in Chapter 2.

Key Issue 1 – Trails Used for Recreation

All action alternatives propose routes that would cross trails used for recreation that are located in the project area. The current route of the power line does not cross trails on National Forest System lands that are used for recreation.

Unit of Measure – “Number of times power line corridor crosses the recreation trails”.

Key Issue 2 – Impacts of building a power line corridor across National Forest System lands

Each action alternative involves proposing constructing a new power line corridor (30 feet wide) through National Forest System lands. The length of the corridor varies by alternative, but impacts common to all action alternatives include tree removal, soil disturbance (which could lead to noxious weed invasions), and the development of a primitive road to be used for construction and maintenance of the power line. All action alternatives will cross the Cascade Lakes National Scenic Byway but the number of crossings could vary by alternative.

Unit of Measure – “Number of miles of corridor created for the power line route” and “number of times the power line crosses the highway”.

Other Issues or Concerns

Concerns regarding the potential harmful effects of electromagnetic frequencies were also raised by

the public, as the power line currently passes through populated areas. The existing power line is, however, relatively low-voltage (69 kilovolt), but could be upgraded in the future. Moving this power line from its existing location would place it farther from populated areas, and could help alleviate this concern.

CHAPTER 2 – ALTERNATIVE DISCUSSION

ALTERNATIVES CONSIDERED IN DETAIL

Alternative 1 (No Action)

The No Action Alternative is a baseline by which to measure relative changes that would result from implementation of the action alternatives. Under this alternative, the proposed project would not take place. A new route would not be developed at any other location. (see Map 2)

Alternative 2 (Proposed Action)

This route is shown in Map 3. It begins on the south side of Highway 46 and terminates at a location to the north in Section 11. This route diverges from the existing route, just south of Highway 46 in the southwest corner of Section 22.

This action would consist of constructing a power line corridor for approximately 3.5 miles. Heavy equipment needed would include: a grapple piler, a bulldozer, large trucks for removing logs and hauling power poles, line truck for power auger, and flatbed truck to haul conductor line and supplies. The right-of-way will be 30 feet wide. Construction would consist of: clearing trees, drilling 10-foot deep holes to install wooden utility poles (average height of pole is 70 feet), and installation of the conductor wire. Maintenance access would be limited to a primitive road for a pick-up truck to patrol the right-of-way. The line would be single pole construction, with no cross arms. Guy wires would be needed at angle points (estimated to be two locations). Additionally, approximately 3.5 miles of existing power line would be removed from federal and private lands.

Alternative 3

This alternative was developed to respond to Key Issue 1. A route was identified that would result in fewer impacts to recreation trails than the proposed action. This route is shown in Map 4. It begins on the north side of Highway 46 and terminates to the north in Section 11. This route diverges from the existing route, just north of Highway 46 in the northeast corner of Section 22.

The actions under this alternative would be the same as Alternative 2, except the line would be placed about ¼ mile east of Alternative 2. It entails 2.8 miles of new line construction and 2.8 miles of line removed.

Alternative 4

This alternative, as well as Alternative 5, was developed to respond to Key Issue 2. These alternatives reduce the amount of new power line corridor construction on National Forest System lands from that proposed in Alternative 2 (Proposed Action). This route is shown in Map 5. Most of the existing power line located on National Forest System lands would remain. Approximately 2,000 feet of line would be rerouted, all within the northeast corner of Section 14.

The actions under this alternative would be the same for Alternatives 2 & 3; however, relatively few trees would need to be removed, as the area is sparsely treed. Additionally, the majority of the new line would be located on privately owned land that is along the Forest boundary, on the western edge of Section 12, and only about 2,000 feet of this new line would be on Forest land. The new line would diverge from the existing line in the northeast corner of Section 14, and continue north, to the southwest corner of Section 12. The new line would be located approximately 1,000 feet west of the existing line, and include an aerial crossing of Highway 46. This alternative entails

construction of approximately .4 miles of new line on National Forest System lands and removal of approximately .5 miles of line.

Alternative 5

This route is shown in Map 6. Most of the existing power line located on National Forest System lands would remain. Approximate 2,000 feet of line would be rerouted, all within the northeast corner of Section 14.

This alternative is the same as Alternative 4, except that the power line crossing Highway 46 would be underground. This would entail burying the power line from the point where it diverges from the existing line, and continue below ground until it connects with the private property-Forest boundary (about 2,000 feet of underground line). This would entail using heavy equipment and blasting to dig the ditch and bury the line.

COMPARISON OF ALTERNATIVES

Table 2. Comparison of the alternatives in relation to the activities proposed in Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternative 3, Alternative 4, and Alternative 5. Measurements are approximate, and privately owned land is excluded.

	Alt. 1 (No Action)	Alt. 2 (Proposed Action)	Alt. 3	Alt. 4	Alt. 5
Additional Impact to National System Lands (acres)	None	12.7	10.2	1.4	1.4
New Corridor (miles)	None	3.5	2.8	0.4	0.4
Power Line Removed (miles)	None	3.5	2.8	0.5	0.5
Corridor Removed* (miles)	None	2.5	1.8	0.5	0.5
Deer Winter Range/Key Elk Area	No Impact	18 gates	9 gates	No Impact	No Impact
# of Crossings of Recreation Trails	2	6	2	2	2
# of Aerial Crossings of Scenic High	3	1	1	3	2
Risk of Weed Spread	No Impact	High	High	High	Very High
Cost of Mitigation+	No Costs	\$56,000	\$27,000	\$2000	\$2000

* “Corridor Removed”, in Alternatives 2 and 3, is approximately one mile less than “Power Line Removed”, because another power company shares about one mile of the corridor with Midstate Electric, Inc. and this shared corridor would remain, regardless of alternative chosen.

+ “Cost of Mitigation”, in Alternatives 2, 3, 4, and 5 represent implementing the mitigation measures discussed on page 13. All costs are estimates. Midstate would be responsible for these costs. These figures do not include construction cost.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Alternate locations and construction techniques for power line routes that were initially considered but were eliminated from further study because they were logistically unfeasible or cost prohibitive include:

1) Tie-in northern point of power line to a point at the northwestern corner of section 11. This route was logistically unfeasible because of the increased amount of new line that would have to be

constructed to tie into the existing line. This point is also less than ½ mile from a recreation trailhead (Phil's Trailhead), and would detract from the natural aspect of the area.

2) Replace all of the existing overhead power line with a buried line in the same location. This option would be cost prohibitive. It was estimated that it would cost \$216,000 to bury 850 feet of this power line. If this cost were considered across the entire project area, it would cost approximately four million dollars to bury 3.5 miles of this power line. This cost would not be economically feasible for Midstate Electric Cooperative, Inc.

MITIGATION MEASURES

Alternatives are designed to be consistent with the desired condition specified in the Forest Plan and the standards and guidelines contained within. Many Forest Plan Standard and Guidelines and Eastside Screens were applied in the design of the alternatives and are not listed here. The following would be applied to reduce potential adverse impacts of all "action alternatives (Alternative 2-5). If implementation or layout problems or opportunities are encountered, the appropriate specialist will be consulted.

Common to All Action Alternatives

Botany:

Prevention of noxious weed invasion is always the preferred strategy, because it is most effective and least costly. Precautions must be taken to prevent any weed parts or seeds from spreading into the project area.

1. The permittee will treat all infestations in proposed areas of disturbance prior to commencement of project activities. Currently there is not an option to use herbicides on these populations, so it will be necessary to hand-pull the sites. The district botanist can offer advice on good options for getting this work done.
2. Clean all equipment before entering and after leaving National Forest System lands. Remove mud, dirt, and plant parts from project equipment before moving it into the project area and before proceeding to the next project. This includes any portion of the project, including the timber removal phase and construction phase.
3. Prior to the beginning of construction, a Forest Service botanist or other employee knowledgeable about the noxious weed situation at the site will educate power line construction personnel as to where the weeds are, what they look like, and how they can be treated.
4. The permittee will be responsible for continued monitoring of the new line for weed invasions, at a minimum of once per year between May 15 and July 1, and treatment if weeds are found. The most likely and difficult weeds are likely to be spotted knapweed and dalmation toadflax.

Heritage Resources:

6. All heritage properties will be avoided during implementation of this project.

Recreation:

7. Minimize road and trail intersections.

8. Obliterate roads where feasible.

Scenic Resource:

9. Slash treatment will be completed within one year of completion of the project. Stumps will be cut to ground level within the immediate foreground (zero to 300 feet) of road or trail corridors.
10. Rehabilitate the impacted area within the foreground landscape area (zero to ½ mile corridor) soon after the completion of the proposed management activities. Recommended treatments include, but are not limited to, native grass broadcast seeding and planting of shrubs in disturbed areas.
11. Utilize “shadow” line to minimize reflective property of the actual power conductor.

Wildlife:

12. To avoid potential disturbance to wintering deer and elk within the project area, do not conduct project activities during the period of December 1 to March 31. If activity needs to occur within this time period, an assessment of the activity will be conducted (whether it be logging, hauling, or pole placement). If the activity is deemed acceptable (snow loads will be considered), a permit to be in the area during the closure period will be necessary.
13. In the event that an active raptor nest site is located in the vicinity of the project area, the project biologist will immediately be notified so that the appropriate mitigation measures are taken.
14. If an active raptor nest is located in the vicinity of the project area, the project biologist will immediately be notified so the following mitigation measures can be considered - the nest will be protected from disturbing activities within ¼ mile of the nest during the periods of:
 - Cooper’s Hawk – April 15 through August 31
 - Sharp-shinned Hawk – April 15 through August 31
 - Northern Goshawk – March 1 through August 31
 - Red-tailed Hawk – March 1 through August 31
15. Protect all snags within and outside the power line right-of-way (unless its an obvious hazard to the power line) and large logs (greater than 12 inches in diameter at large end) for nesting, roosting, and foraging habitat for woodpeckers.
16. If the area is deficient in downed logs, retain slash piles and place in strategic areas so they would not later be included in future burn plans.
17. Create a snag for every snag removed >12 inches in diameter-at-breast-height.
18. To avoid potential loss of bat individuals resulting from loss of roosting habitat (trees ≥21 inches diameter-at-breast-height and large snags) do not conduct tree removal activities during the period of April 1 to September 30. If activity needs to occur during this time period, a survey to identify these larger trees and snags needs to be conducted to determine the amount of this habitat that would actually be removed.
19. If hazard trees ≥21 inches diameter-at-breast-height occur outside of the right-of-way, top these trees to create snags instead of cutting them down.
20. If possible, within the right-of-way, top trees ≥ 21 inches in diameter-at-breast-height to create snags instead of cutting them down.
21. To avoid potential nest destruction and loss of broods for neotropical migrant birds, woodpeckers and other cavity nesters, do not conduct project activities during the period of April 1 - August 15. If activity needs to occur within this time period, a survey to look for any bird nests (neotropical migrants, raptor, or cavity nesters) needs to be conducted along the power line route. If any are found, delays may need to occur for implementation within the vicinity of the nest until later in the nesting season.

Fuels:

22. Slash disposal will be best accomplished by whole tree removal.
23. The slash created from project activities will be piled and burned prior to the power line being energized. If the slash is to be burned after the line is energized, then it needs to be placed a minimum of 50 feet away from the lines, if piled by hand and at least 100 feet away if larger machine piles are made.

Measures specific to particular alternatives

Recreation:

24. Specific to Alternative 2 (Proposed Action) : Relocate ½ mile of trail to decrease trail/power line intersections from 6 to 2.

Wildlife:

25. Specific to Alternative 2 (Proposed Action) and Alternative 3: To increase habitat effectiveness within deer habitat (MA7) and reduce disturbance to deer and elk within the project area, roads deemed ‘unnecessary’ will be closed by obliteration and blocking. In addition, gates will be placed at junctions along the power line where it would cross open roads (potentially 9 gates with Alternative 3 and 18 gates with Alternative 2) to prevent the ‘primitive’ road from becoming a heavily used road. Also, signs will need to be placed to discourage use by off highway vehicles.
26. Specific to Alternatives 4 and 5: Signs will need to be placed at the Forest boundary to prevent user-created roads or trails from branching off of the power line.

MONITORING COMMON TO ALL ACTION ALTERNATIVES

The Deschutes National Forest LRMP requires the maintenance of Scenic Quality Standards (SQS) within the Midstate Power Line Project area, specifically along the Cascade Lakes National Scenic Byway system. Site monitoring would be conducted by Forest Service personnel during and following implementation of proposed activities to insure compliance with Scenic Quality Standards and mitigation measures discussed above. Targets for monitoring include the proposed crossing area(s) and power line corridor along the Foreground landscape of the Cascade Lakes National Scenic Byways.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Affected Environment (existing condition) and Environmental Consequences (Effects) sections provides the scientific and analytical basis for alternative comparison. This section describes the beneficial or adverse impacts to the environment that would occur if the various alternatives were implemented. Probable effects are discussed in terms of environmental changes from the current condition and include qualitative as well as quantitative assessments of direct, indirect, and cumulative effects.

Impacts are defined as follows:

Direct effects: Those effects that occur at the same time and in the same general location as the activity causing the effects.

Indirect effects: Those effects that occur at a different time or different location than the activity to which the effects are related.

Cumulative effects: – Those effects that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

Specialist reports have been summarized in the following discussions within this section. For more detailed and supporting documentation, please refer to the specialist reports in the Midstate Electric Cooperative, Inc. Power Line Relocation Project Record located at the Bend-Fort Rock District Office. (See Botany Biological Evaluation and Noxious Weed Risk Assessment, Heritage Resources Report, Water and Fisheries Report, Recreation Report, Scenic Report, Wildlife Report and Biological Evaluation, Roads Report, Silviculture Report, and Fire and Fuels Report)

BOTANY

AFFECTED ENVIRONMENT

Threatened, Endangered, and Sensitive (TES) Species

The area is characterized by ponderosa pine/bitterbrush/Idaho fescue, and sandy to loamy volcanic soils. Elevation is at approximately 4100 feet. There are known *Castilleja chlorotica* (green-tinged paintbrush, or CACH) populations roughly two miles to the west. There is one known population about ½ mile to the west at the southern end of the westernmost proposed line. There was a medium probability of finding CACH along the route described by Alternative 2 (Proposed Action) which is closest to the known populations to the west. There is no other sensitive plant species suspected for this area, which also includes the bryophytes/lichens/fungi added to the list in July 2004. See Project Record – Botany Report for a list of these species and their habitats.

There is no habitat for Threatened, Endangered, or Candidate plant species within the project area, with the possible exception of *Botrychium lineare*, a Candidate species. Its range distribution is very wide and its habitat varies just as widely. However, it has not been found on the Deschutes National Forest, (nor, more specifically, in the project area), after 14 years of project-level surveys, which include complete lists of plants encountered. The nearest known site lies in northeastern Oregon, in Wallowa County. See Appendices C and D for a list of these species and their habitats.

In July 2004, two Forest Service trained personnel surveyed the southern half of the two proposed new lines, at a width of about 100 feet, as well as the portion of existing line that occurs on Forest Service land that may be abandoned; no TES plants were located. Although there are populations not far away, it is likely that no TES plants were located because the soils in the proposed lines consist of deep sand and/or because there is a strong component of manzanita (*Arctostaphylos patula*) present. CACH does not prefer this kind of soil type; it is found almost entirely in shallow, rocky soil types. Neither has it ever been found within manzanita (or any other plant species, for that matter, in proximity to that shrub). For these reasons, the northern portion was not canvassed; also, this area is further from the CACH populations already described.

The route proposed in Alternatives 4 and 5 was not surveyed because it was not added until after the field season. However, given the nature of the plant community in that area, which contains a large expanse of manzanita, and because similar habitat has been surveyed in that area, it is not high-probability CACH habitat, and for these reasons, a survey is not recommended.

The existing line was disturbed and had toadflax and spotted knapweed populations present, and was not suitable for TES plants.

The field survey forms are on file at the Bend-Ft. Rock Ranger District.

Noxious Weeds

The Midstate Electric Cooperative, Inc. Power Line Relocation Project poses a high risk of noxious weed introductions or spread, for all action alternatives. See Project Record – Botany Report for a discussion of ranking and for management recommendations.

Forest Service Manual (FSM) direction requires that Noxious Weed Risk Assessments be prepared for all projects involving ground-disturbing activities. For projects that have a moderate to high risk

of introducing or spreading noxious weeds, Forest Service policy requires that decision documents must identify noxious weed control measures that will be undertaken during project implementation (FSM 2081.03, 29 November 1995).

Aggressive non-native plants, or noxious weeds, can invade and displace native plant communities causing long-lasting management problems. Noxious weeds can displace native vegetation, increase fire hazards, reduce the quality of recreational experiences, poison livestock, and replace wildlife forage. By simplifying complex plant communities, weeds reduce biological diversity and threaten rare habitats. See Project Record – Noxious Weed Risk Assessment for potential and known weeds for the Deschutes National Forest.

In addition to noxious weeds, which are designated by the State, there is a group of non-native plants that are also aggressive though are not officially termed "noxious". For the Bend-Ft. Rock Ranger District, these species are typically mullein (*Verbascum thapsus*), cheatgrass (*Bromus tectorum*), and horehound (*Marrubium vulgare*). These species are also considered in this assessment.

ENVIRONMENTAL CONSEQUENCES

Threatened, Endangered and Sensitive (TES) Species

Alternatives 1, 2, 3, 4, and 5

Direct, Indirect, and Cumulative Effects

No TES species have been identified in proposed treatment areas for the five alternatives. No TES plants were located during survey, and suitable habitat was not encountered.

Noxious Weeds

Alternative 1 (No Action)

Direct and Indirect Effects

There are no anticipated direct effects to noxious weeds if this project does not occur. An indirect effect of not implementing project activities would be that there would be no new ground disturbing activities thus minimizing potential sites for weeds to invade and become established.

Cumulative Effects

A 'moderate' risk ranking was given for the No Action alternative because, although there would be no ground disturbance as a result of any Forest Service action associated with this project, the weed situation can be expected to grow worse as more people find these areas and use them for both motorized and non-motorized reaction.

Alternative 2 (Proposed Action)

Direct and Indirect Effects

A direct and indirect effect of this alternative is that there is a high risk of weed invasion to areas where the ground is disturbed due to project implementation activities. It will be difficult, even with preventive measures, to avoid new weed sites from entering the project area.

Cumulative Effects

Weeds can be expected to continue to arrive and spread within the new power line corridor. This

would increase the acres of weeds on National Forest System lands. Careful monitoring of the line, at the minimum on an annual basis, is necessary to ensure that weed populations do not become unmanageable across the project area.

Alternative 3

Direct, Indirect, and Cumulative Effects

Effects for this alternative would be the same as for Alternative 2.

Alternative 4

Direct and Indirect Effects

Although the route for Alternative 4 was not surveyed (Alternatives 4 and 5 were developed after the field season), there are known toadflax and spotted knapweed sites in the vicinity; it is likely that installation of this line, either aerial (Alternative 4) or buried (Alternative 5) will encourage weed invasion of the ground disturbed by the proposed alternatives. In each of these alternatives, it is anticipated that the line across one parcel of private land will be rerouted to a location directly adjacent to National Forest System lands. There is a risk that weeds could easily spread onto National Forest System lands and/or down the line to the point where the line does occur on National Forest System lands.

Cumulative Effects

Effects for this alternative would be the same as for Alternative 2.

Alternative 5

Direct and Indirect Effects

Direct and indirect effects of this alternative are similar to Alternative 4, but would be intensified by increased ground disturbance. Approximately 2,000 feet of continuous ground would be disturbed in order to bury the power line, and there would be a very high probability of weeds invading this newly-disturbed area.

Cumulative Effects

Effects for this alternative would be the same as for Alternative 2.

HERITAGE

Management direction for heritage resources is found in the Deschutes National Forest Land and Resource Management Plan, Forest Service Manual section 2360, and the 1995 Programmatic Agreement between Region 6 and the Oregon State Historic Preservation Office. Management direction is also provided through The Advisory Council On Historic Preservation. The Forest Plan directs the consideration of the effects to heritage resources for projects that fall within the Forest's jurisdiction. Further direction indicates that the Forest will determine what heritage resources are present on the forest, evaluate each resource for eligibility to the National Register of Historic Places (Register) and protect or mitigate effects to resources that are eligible.

AFFECTED ENVIRONMENT

The project area topography varies from zero to 45 percent slope with variable aspects. The vegetation community is dominated by ponderosa pine, and includes bitterbrush, manzanita, rabbitbrush, Idaho fescue, bunch grasses, and currant (found near rock outcroppings). The soil consists of dacite pumice

lapilli's and volcanic ash from the eruption of Mount Mazama. This deposit of soil is sand-sized and is between 12 and 30 inches thick. The project area lies on the low flanks of the Cascade Mountains. Gentle slopes on lava fields and glacial outwash dotted with cinder cones, dacite domes, and a few stratovolcanoes characterize this area.

Various portions of the proposed project area have been surveyed in the past, and the area is considered to have been adequately surveyed for cultural resources. There have been four previous cultural resource surveys completed within the project area (1989-1991). Four known cultural sites were previously recorded in the project area.

The specific areas proposed for the power line corridor were surveyed for cultural resources in summer 2004. No new cultural properties were found during this survey.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects: Under this alternative the project would not be implemented so would not have no effect on heritage resources.

Alternative 2 (Proposed Action), Alternative 3, Alternative 4 and Alternative 5

Direct, Indirect, and Cumulative Effects:

There would be no effect to the heritage resources on the project area. Known sites in the area would be avoided by locating the power line corridor outside of the boundaries of the sites, or by placing poles for the power line away from existing heritage resources.

WATER AND FISHERIES

AFFECTED ENVIRONMENT

The project area is east of the owl line, and lies within the management area of the Inland Native Fish Strategy (INFISH), which amended the Deschutes National Forest Land and Resource Management Plan (1990) in 1995. There are no known perennial or intermittent streams within the project area. A field reconnaissance in the fall of 2004 did not locate any channels. The nearest waterbody is a backwater area connected to the Deschutes River, approximately 0.3 miles southeast of where the power line relocation would start adjacent to the Cascade Lakes Highway. There are no lakes, ponds, reservoirs, or wetlands within the project area.

Management direction within INFISH requires Riparian Habitat Conservation Areas (RHCAs) to be delineated for watersheds. There are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. There are no known riparian areas within the project area, therefore no RHCAs were designated.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects: Under this alternative the project would not be implemented so would have no effect on water or fishery resources.

Alternative 2 (Proposed Action), Alternative 3, Alternative 4 and Alternative 5

Direct, Indirect, and Cumulative Effects:

There are no waterbodies within or in close vicinity to the project area, therefore there would be no direct, indirect, or cumulative effects to water resources, fish populations or fish habitat. There are no Oregon Department of Environmental Quality 303(d) listed waterbodies in the project area, nor any Essential Fish Habitat (EFH) or critical habitat for any listed fish species.

Riparian Management Objectives Compliance

Since there are no known stream systems within the project area, the project would have no effects to the Riparian Management Objectives listed under INFISH.

RECREATION

AFFECTED ENVIRONMENT

Increases in tourism and the local population has significantly increased recreation demands in Central Oregon the last 20 years, as the area is known for its year-round recreational opportunities and its consistently favorable weather. Current projections indicate an increase in population, visitation and recreation use of five to seven percent per year.

The project area is a destination area for varied motorized and non-motorized year-round recreation use. The majority of the use in the area is mountain biking with some minor use by runners and hikers. Two popular trails, 'KGB' and 'COD' cross the power line routes discussed in all action alternatives.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

Under this alternative, there would be no relocation of the power line and therefore no need for relocation of the trail. Portions of the existing trail are too steep and need to have work done to eliminate drainage problems.

Alternative 2 (Proposed Action)

Direct and Indirect Effects

Under this alternative, two primary trails, KGB and COD, cross the proposed power line route a total of six times. The visual and physical impacts of these intersections detract from the experience on the trail. The COD trail currently crosses the power line route five times. With less than ½ mile of trail relocation, the number of crossings can be reduced to one crossing on KGB and one on COD. The trail relocation would be beneficial by improving drainage and decreasing erosion.

Other potential effects include trail intersections with roads. A certain number of roads are required

to maintain each power pole. Those locations are not clearly marked on the ground at this time. However, intersections between trails and roads should be minimized as well, and roads should be closed or gated wherever possible.

Cumulative Effects

The primitive road that will be created to construct and maintain the power line could be used as a recreation trail. Other effects to recreation would be negligible.

Alternative 3

Direct and Indirect Effects

Under this alternative, two primary trails, KGB and COD, intersect the proposed power line route once each.

Cumulative Effects

Effects for this alternative would be the same as for Alternative 2.

Alternatives 4 and 5

Direct and Indirect Effects

Under these alternatives, there would be no new intersections between trails and the power line route. Other effects to recreation would be negligible.

Cumulative Effects

The primitive road that will be created to construct and maintain the power line could be used as a recreation trail. Other effects to recreation would be negligible.

SCENIC

AFFECTED ENVIRONMENT

The existing Midstate Electric Cooperative, Inc. power line is located within the project area. This power line basically runs parallel to Highway 46, through healthy and well-stocked second growth ponderosa pine forest. This power line currently crosses Highway 46 at three locations. One location is adjacent to the Inn of the Seventh Mountain; one crossing is adjacent to the Widgi Creek development and one is just west of the Entrada Lodge. A PacifiCorp power line is located within a portion of the project area and shares the right-of-way with the Midstate power line in Section 2. It does not cross Highway 46 (see Map 2).

The existing power line and its three crossings are somewhat noticeable to the casual traveling motorist, at the rate of speed of 55 miles per hour, on this stretch of Highway 46. It allows approximately two to five seconds of viewing duration of the power line. The visual impact of the existing power line at its present location is softened by the second-growth ponderosa pine trees on both sides of the highway. The scarring of landscape created by the construction of the line some years ago is well healed with vegetation of density and height that effectively screens some of the visual impact of the power line. In general, the view of the existing power line and its associated corridor are currently considered to be subordinate to the existing landscape character. It appears to blend in well with the rest of the adjacent forest land, housing, and golf course developments.

Within the Midstate Power Line Project area, the Cascade Lakes National Scenic Byway (Highway 46) is the primarily scenic view corridor and travel route that runs through this area. This corridor has been allocated as 'Natural Appearing Landscape with High Scenic Integrity Level' (Retention Foreground Scenic View, MA-9, SV-1).

Scenic Views standards and guidelines state that utility developments may locate within Scenic Views corridors or allocation areas, if facilities or associated improvements are located, designed, and maintained to blend with the characteristic landscape. Scenic Quality Objectives should be met, as viewed from travel routes, recreation areas, and other sensitive viewer's locations.

ENVIRONMENTAL CONSEQUENCES

The proposed management activities could alter the vegetation pattern and landscape character in a way that may affect the scenic corridor by creating different forest character. This would result in an alteration of scenic and recreational experience along Highway 46. The effect on scenic resources from the proposed management activities would be most evident within the foreground landscape (zero to 1/2 mile corridor) as seen from the highway.

Alternative 1 (No Action)

Direct Effects

Under this alternative, there would be two new and taller steel towers being proposed to carry the power line along the west and north of the Forest Service boundary, but still within the private land. The existing power line to the south of Highway 46 would remain on the existing route.

Under this alternative, the existing landscape character, scenic quality and integrity level would be directly altered by the two proposed steel towers within private land. The second tower is expected to be about ¼ mile away from Highway 46, however the distance would not help reduce visual effect, brought on by the new steel towers, in this wide-opened, and burned out landscape area. The existing power line crossing and associated power poles south of Highway 46 would continue to remain visible to a casual forest visitor.

Indirect and Cumulative Effects

An indirect effect of this alternative would be that the three crossings of the power line over the Cascade Lakes National Scenic Byway would remain. If more power lines are constructed in the future that cross this scenic byway, then these three power line crossing could contribute cumulatively to a degradation of the scenic quality of the highway.

Alternative 2 (Proposed Action)

Direct, Indirect, and Cumulative Effects

Under this alternative, the power line structures, the new crossing over the highway and the 3.5 miles of associated corridor are all expected to highly alter the area's scenic views and likely will not blend well with the existing landscape. The proposed removal of the current three power line crossings down to a single crossing would improve the long-term scenic quality along Highway 46.

The utilization of existing access roads and no new road construction associated with the proposed activities would also reduce visual impact to the area's landscape.

The short-term scenic quality (up to five years) is not expected to meet the LRMP standards and guidelines for scenic views (MA-9, as defined under Section 83 and 84). However, long-term (5 year and beyond) scenic quality is expected to improve over time under this alternative after the visible scarring on the landscape, brought on by the proposed activities, has been properly rehabilitated and healed.

Alternative 3

Direct, Indirect, and Cumulative Effects

Under this alternative, the effect on existing landscape character, scenic quality, and scenic integrity level is slightly less than the overall effect under Alternative 2 (Proposed Action). A moderate to high alteration to the existing landscape is expected as a result of the proposed management activities.

The number of existing overhead crossing is expected to reduce from the current three locations down to one location. Such proposed activity will help to reduce visual impact to the existing landscape.

Since no new power line crossing over Highway 46 is being proposed, the alteration to the area's landscape is then very much focused on the associated new 2.8 miles power line corridor that is expected to have a direct effect on vegetation in the area. This new power line corridor is expected to highly alter the area's scenic views and is not expected to blend well with the existing landscape.

The short-term scenic quality is not expected to meet the LRMP standards and guidelines for scenic views (MA-9, as defined under Section 83 and 84) following the construction of the new 2.8 miles power line corridor. However, long-term (5 years and beyond) scenic quality is expected to improve over time under this alternative after the visible scarring on the landscape, brought on by the proposed activities, have been naturally re-vegetated.

Alternative 4

Direct, Indirect, and Cumulative Effects

This alternative proposed shifting the existing power line and poles to the west along the Forest Service boundary and private land. Power line and associated power poles is similar to the existing.

Under this alternative, the short-term effect on scenery, if any, can be mitigated, assuming the power poles will remain small verses larger steel towers as proposed under the No Action Alternative 1. The effect on landscape character, scenic quality and scenic integrity level is expected to be minimal and short-term, compare to Alternative 1 (with associated activities). The scarring of landscape, brought on by the power line relocation, would be reduced as shrubs and trees return and continue to grow.

Alternative 5

Direct, Indirect, and Cumulative Effects

Under this alternative, the effect on existing landscape character, scenic quality and scenic integrity level is very much similar to Alternative 4. However, the proposal to bury the power line under

Highway 46 is expected to help reduce the visual impact brought on by the proposed management activities. Both the short-term and long-term scenic quality is expected to improve over time under this alternative after the visible scarring on the landscape has been naturally re-vegetated.

WILDLIFE

AFFECTED ENVIRONMENT

Federally Threatened, Endangered, and Candidate Species

Wildlife species and habitats have been reviewed to determine if the project activity will have any negative effects on listed, proposed, candidate or sensitive species in order to meet the requirements for a biological evaluation. There are no Federally Threatened, Endangered, and Candidate Species within or adjacent to the project area.

Forest Service Region 6 Sensitive Species

Wildlife species and habitats have been reviewed to determine if the project activity will have any negative effects on listed, candidate or sensitive species in order to meet the requirements for a biological evaluation. There are no Forest Service Region 6 Sensitive Species within or adjacent to the project area.

Management Indicator Species, Species of Concern and Other Species

The project area includes mule deer summer range, spring and fall transitional range, and winter range. Summer and transitional range is generally within General Forest (MA-8), while the winter range is designated as Deer Habitat (MA-7). Wildlife species and habitats have been reviewed to determine if the project activity will have any negative impacts on LRMP Management Indicator Species (MIS), ecological indicator species, special habitats, U.S. Fish and Wildlife Service (USFWS) species of concern, Northwest Forest Plan species and habitats, and Eastside Screens habitats and species. Only those species listed in Table 3 occur within or adjacent to the project area and could potentially be impacted by proposed project activity.

Table 3. Wildlife Species or Habitat Within or Near the Project Area

MIS Species and Habitats	Species of Concern (USFWS)
Deer	Olive-sided flycatcher
Summer range	Fringed myotis
Winter range	Long-eared myotis
	Long-legged myotis
Elk	Small-footed myotis
Key elk habitat	Yuma myotis
	Western big-eared bat
Raptors*	
Woodpeckers	Northwest Forest Plan
Ecological Indicator Species	none
	Eastside Screens (sales only)

none

* Includes golden eagle, northern goshawk, red-tailed hawk, Cooper's hawk, sharp-shinned hawk, great gray owl, flammulated owl, northern pygmy owl, and osprey.

Deer Habitat (MA 7) and summer range

The project area boundaries for the deer habitat analysis includes the 4610 Road to the west, the 4601 Road to the north, the Forest boundary to the east, and Highway 46 and the existing power line (whichever is further south). This management area covers approximately 8,410 acres and includes a winter closure (Tumalo Winter Range Cooperative Closure) that begins on December 1 and ends on March 31. This deer habitat (winter range) is part of a much larger biological range that extends south of Highway 46 adjacent to the Deschutes River near Benham Falls and crosses the river to include lands on the east side and extends north through private timber lands onto the Sisters Ranger District. This habitat is also part of the Oregon Department of Fish and Wildlife (ODFW) Upper Deschutes Management Unit. The management objective for deer in this unit is 2,200 deer, with current population estimates at 1,300 (personal communication with Glen Arndt of ODFW, February 2005). The greatest impacts to wintering deer in this area are increasing development on private land and human disturbance (mainly due to roads). Poaching is also on the increase. The winter road closure is fairly effective (the closure has been in effect since the early 1970s), but violations are on the rise (personal communication with Steve George of ODFW, February 2005).

Current open road density within MA 7 is 3.58 miles per square miles. This road density takes into account both system and non-system (i.e. user-created) roads. Since there is a winter road closure in effect within this management area, only the roads that are open during this closure are counted as open. This decreases the open road density within MA 7 to 0.4 miles per square mile. The LRMP states that open road densities shall average 1.0 to 2.5 miles per square mile. This winter range closure is imperative in this area because of the high density of roads, and the amount of use the area incurs by the public. Violations in the closure area are increasing, so although with the closure, road densities are low, the high density of roads physically in the area allows easy access, resulting in increasing disturbance to deer.

The area surrounding the project is used year-round by deer and would also be subject to Forest Plan Standards and Guides (S&G's) for target road densities within summer range, which is 2.5 miles per square mile, to achieve habitat effectiveness. The current road density within the project area is 2.82 miles per square mile.

A cover analysis was not completed for this project. The last analysis was conducted for the Katalo Timber Sale in 1996. At this time, after logging has occurred, Forest Plan Standards and Guides for cover in MA-7 (thermal and hiding) are expected to be above recommended levels of 53 percent, above the Forest Plan S&G's of 40 percent.

Elk

This project occurs within the northern portion of the 21,462 acre Ryan Ranch Key Elk Area (KEA). The elk that use this KEA are permanent residents, and utilize the portion of the KEA adjacent to the project area mainly during the winter, especially during high snow levels. The management objective for elk in this KEA is 300 elk, with current population estimates at 250 (personal communication with Steve George of ODFW, February 2005). The greatest impacts to elk wintering in this area are similar to those of wintering deer.

Current open road density within the KEA is 2.30 miles per square mile. The Forest Plan states that open road densities should not exceed an overall average between 0.5 to 1.5 miles per square mile within the KEA unless impacts to elk can be avoided or the proposed project would result in a net benefit to elk habitat. Where public use is heavy, the low end of the range should be the objective (WL-46).

A cover analysis was not completed for this project. The last analysis was conducted for the Katalo Timber Sale in 1996. At this time, after logging had occurred, Forest Plan Standards and Guides for cover in the KEA (thermal and hiding) were still above recommended levels of 30 percent.

Raptors

Habitat occurs for several raptor species including red-tailed hawks, Cooper's hawks, sharp-shinned hawks, great-horned owls, and pygmy owls. During field reconnaissance, no active nest sites were found. Several nests were discovered that were not being utilized. These nests were most likely Cooper's hawk nests. A red-tailed hawk was also seen flying in this same vicinity. The area was checked for an active nest, with none being found.

Woodpeckers and other Cavity Nesters

Several species of woodpeckers and cavity nesters may inhabit the project area. These would include the common flicker, hairy woodpecker, downy woodpecker, olive-sided flycatcher, mountain chickadee, red-breasted nuthatch, and pygmy nuthatch.

Bats

Several species of bats may occur within the project area and include the fringed myotis, long-eared myotis, long-legged myotis, small-footed myotis, yuma myotis, and western big-eared bat. These bat species would roost in the foliage of larger trees, under the sloughing bark of snags, or in rock crevices.

Neotropical Migratory Birds

Several species of neotropical migratory birds would utilize the habitat within the project area. There are shrub-dependent species such as sparrows and warblers, such as chipping sparrows, green-tailed towhees, and MacGillivray's warbler, and forest-dependent species, such as olive-sided flycatchers, and yellow-rumped warblers.

ENVIRONMENTAL CONSEQUENCES

Summary

The area surrounding the proposed alternatives for the Midstate Electric Cooperative, Inc. Power Line Relocation Project provides habitat for a variety of wildlife species. The road system is immense and provides many avenues for disturbance and stress to wildlife. Alternatives 2 (Proposed Action) and 3 are similar in nature, with Alternative 2 (Proposed Action) impacting more acres of habitat (2.5 acres) than Alternative 3. With these two alternatives, direct negative impacts can be reduced by implementing mitigation measures. The indirect impacts would be more difficult to mitigate. For some species, such as cavity nesters and neotropical migratory birds, these impacts would be negative. For deer and elk, these indirect impacts could be mitigated, but at a cost of obliterating and blocking roads, and installing gates on roads to limit access. It is highly debatable whether installation of gates is actually effective.

Alternatives 4 and 5 would have similar impacts to one another (one having the power line above ground on public land and the other to bury the line on public land), where the direct negative impacts could be mitigated. The indirect impacts are few to none, because little of the new power line would occur on the Forest, with most occurring on the private land adjacent to the Forest boundary. This area is also void of denser forest cover, which means fewer trees that would need to be removed. Thus, the action alternatives that would have the least impact to wildlife are Alternatives 4 or Alternative 5. These alternatives would also provide a fuels break between public and private land, a benefit for both sides.

Federally Threatened, Endangered, and Candidate Species

Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternatives 3, 4 and 5

Direct, Indirect, and Cumulative Effects

There would be no direct, indirect, or cumulative effects to these species because they are not present on or near the project area, and suitable habitat does not occur for them within or near the project area.

Forest Service Region 6 Sensitive Species

Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternatives 3, 4 and 5

Direct, Indirect, and Cumulative Effects

There would be no direct, indirect, or cumulative effects to these species because they are not present on or near the project area, and suitable habitat does not occur for them within or near the project area.

Management Indicator Species, Species of Concern and Other Species

Deer Habitat (MA 7) and summer range

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No negative impacts are expected to occur to deer under this alternative. Road densities would not increase and cover levels would not be reduced. The current disturbance problems would continue to occur but would not increase by the addition of new power line corridor.

Alternative 2 (Proposed Action)

This alternative would impact 12.7 acres of shrub and tree habitat. Both hiding and thermal cover would be lost as a result of this project, but the total acreage lost is low (less than one percent in the winter range as a whole). These corridors should become or remain as foraging opportunities as the road beneath the power line is proposed to remain primitive.

Direct impacts with cover loss would be minimal. Direct impacts could occur to deer wintering within the project area (mainly during high snow years) if activities occur during the winter range road closure period from December 1 through March 31. To minimize possible disturbance, the winter range road closure mitigation measure described below should be adhered to.

The biggest potential negative impact from these alternatives is the road that would need to be

constructed beneath the power line itself. Midstate does not need access along the entire route, but they would need access to every pole. In the project area, there is not current road access available for each pole so a road would need to be constructed along the entire route. The assumption is that it would be constructed as, and would remain as, a primitive road. Although the same number of miles of power line would be removed as created, some of the existing corridor would remain. PacifiCorp shares a portion of the right-of-way with Midstate. If Alternative 2 (Proposed Action) is chosen, approximately 0.8 miles of power line corridor would be removed.

Alternative 2 (Proposed Action) would add an additional 3.5 miles to the current road density. This would increase road densities to 3.8 mi/mi² in deer habitat, and an overall 3.2 mi/mi² within the defined project area. Both could increase negative impacts that are already occurring to deer utilizing this area. Although the roads beneath the power line would not be considered open because of the Tumalo Winter Range Closure, they would provide additional roads for the increasing number of violators to the closure to drive on.

By utilizing the mitigation measures discussed on page 13 to reduce road densities or to discourage use of roads, the project should have little to no negative impacts to deer individuals or populations.

Alternative 3

Direct, Indirect and Cumulative Effects

This alternative would impact 10.2 acres of shrub and tree habitat. Also, this alternative would add 2.8 miles to the current road density. This would increase road densities to 3.7 mi/mi² in deer habitat and an overall 3.1 mi/mi² within the defined project area. Otherwise, effects for this alternative would be the same as for Alternative 2 (Proposed Action).

Alternatives 4 and 5

Direct and Indirect Effects

No direct effects are expected to occur to deer with these alternatives as it occurs outside of the Forest boundary and deer habitat. There is the potential for increased use of the deer habitat adjacent to the private land with construction of the power line. Some indirect effects would result from the need for a primitive road underneath the power line. There are bike trails that cross the Forest boundary in this area, so the primitive road could potentially get more use by bikers and other recreationists. New user-created trails could potentially transpire that would go onto National Forest System lands to connect to roads or other trails. This area would need to be monitored to assure that user-created trails do not occur. The private land adjacent to the Forest boundary is expected to be developed within the near future. This could encourage the use of the primitive road beneath the power line, and create the need for monitoring the Forest boundary.

There would be no net decrease in cover habitat, as this alternative goes through part of the Awbrey Hall Fire (1990) and hiding cover provided by trees is minimal.

Cumulative Effects

With any of the action alternatives increased human presence is an issue. The habitat effectiveness for deer utilizing this area is currently being compromised by the high road density that occurs. The available effective deer winter range is also shrinking in the area due to increased development on adjacent private land, new roads, and increased human presence year around in the area. Previous timber sales have proposed to reduce road densities in the area with the same concerns, but it is unknown if funding would be available to close these roads. Current hiding cover is above Forest

Plan S&G's, but with the East Tumbull project on the horizon, cover levels could be reduced, especially hiding cover adjacent to roads. Vulnerability and harassment of deer would continue to increase if current road densities are not reduced from current levels. Another concern is that with the new power line, is the potential for increased user created roads and trails fingering off of it. It's inevitable, difficult to manage, and is occurring all over the Forest.

Elk:

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No negative impacts are expected to occur to elk under this alternative. Road densities would not increase and cover levels would not be reduced. The current disturbance problems would continue to occur but would not increase by the addition of new power line corridor.

Alternative 2 (Proposed Action) and Alternative 3

Direct and Indirect Effects

These action alternatives would impact fewer acres within the KEA than within deer habitat because only a portion of the power line would go through the KEA.

Both hiding and thermal cover would be lost as a result of this project, but the total acreage lost is fairly low (in the KEA as a whole). These corridors could become, or remain as, foraging opportunities as the road beneath the power line is proposed to remain primitive.

Direct impacts could occur to elk wintering within the project area (mainly during high snow years) if activities occur during the winter. There is a winter range closure period from December 1 through March 31 because the KEA also occurs within the Tumalo Winter Range Closure. To minimize possible disturbance, the winter range road closure mitigation measures described below should be adhered to.

The biggest potential negative impact from these alternatives is the road that would need to be constructed beneath the power line itself. Midstate does not need access along the entire route, but they would need access to every pole. In the project area, there is not current road access available for each pole so a road would need to be constructed along the entire route. The assumption is that it would be constructed as, and would remain as, a primitive road. Although the same number of miles of power line would be removed as created, some of the existing corridor would remain. PacifiCorp shares a portion of the right-of-way with Midstate. If Alternative 2 (Proposed Action) is chosen, approximately 0.8 miles of power line corridor would be removed.

These two alternatives would increase road densities to 2.3 mi/mi² in the KEA. This could increase negative impacts that are already occurring to wintering elk utilizing this area. Although the roads beneath the power line would occur within the Tumalo Winter Range Closure, they would provide additional roads for the increasing number of violators to the closure to drive on.

By utilizing the mitigation measures discussed on page 13 to reduce road densities or to discourage use of roads, the project should have little to no negative impacts to elk individuals or populations.

Cumulative Effects

With Alternatives 2 and 3, increased human presence is an issue. The habitat effectiveness for elk

utilizing this area is currently being compromised by the high road density that occurs. The available effective habitat for elk to use during the winter is also shrinking in the area due to increased development of private land, new roads, and increased human presence year-round in the area. Previous timber sales have proposed to reduce road densities in the area with the same concerns, but it is unknown if funding would be available to close these roads. Current hiding cover is above Forest Plan S&G's, but with the East Tumbull project on the horizon, cover levels could be reduced, especially hiding cover adjacent to roads. Vulnerability and harassment of elk would continue to increase if current road densities are not reduced from current levels. Another concern is that with the new power line, is the potential for increased user created roads and trails fingering off of it. It's inevitable, difficult to manage, and is occurring all over the Forest

Alternatives 4 and 5

Direct, Indirect, and Cumulative Effects

No impacts are expected with these alternatives as it occurs outside of the key elk area and the Forest boundary (1.0 miles of the proposed 1.4 mile power line is on private land).

Raptors

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No impacts would occur to raptor species with the no action alternative.

Alternative 2 (Proposed Action), Alternatives 3, 4 and 5

Direct and Indirect Effects

These action alternatives would impact 12.7 acres of shrub and tree habitat with Alternative 2 and 10.2 acres of shrub and tree habitat with Alternative 3.

There would be few, if any, indirect impacts to raptors. Midstate is willing to keep the right-of-way as primitive as possible. They would be removing larger trees and would request to remove hazard trees outside the right-of-way, but would leave as many shorter trees (up to 8 feet tall) as possible to avoid the "clearcut" effect. The actual acres of habitat impacted are small, and there is nesting habitat available adjacent to the project area. The corridor itself may provide greater foraging opportunities for accipiters where the corridor would pass through denser stands of forest.

If the project occurs during late summer through winter, direct impacts would be negligible. If the project were to occur during the spring to mid-summer around an active nest site, the project would likely have direct, negative impacts to raptors. Disturbance during this time could result in nest failure or direct loss of individuals, thus the mitigation measure described on page 13 should be adhered to.

With mitigation, the project would have no negative impact to raptor individuals or populations that occur within or adjacent to the project area.

Alternatives 4 and 5 - These action alternatives would impact 1.4 acres of shrub and tree habitat. These alternatives pass through the Awbrey Hall Fire that burned in 1990. There is not a high density of trees, especially larger trees, that would need to be removed, but those that would need to be removed may be utilized by red-tailed hawks or owl species such as the great-horned owl. There are no known nest sites in this area to date. If the project would need to occur during the nesting

season, surveys would need to be conducted.

If the project occurs during late summer through winter, direct impacts would be negligible. If the project were to occur during the spring to mid-summer around an active nest site, the project would likely have direct, negative impacts to raptors. Disturbance during this time could result in nest failure or direct loss of individuals, thus, if surveys are conducted and nesting raptors are found, the mitigation measure as described on page 13 should be adhered to.

With mitigation, the project would have no negative impact to raptor individuals or populations that occur within or adjacent to the project area.

Cumulative Effects

No cumulative impacts are expected with the action alternatives.

Woodpeckers and other Cavity Nesters

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No impacts would occur to woodpeckers and other cavity nesters with this alternative.

Alternative 2 (Proposed Action) and Alternative 3

Direct and Indirect Effects

These alternatives would be removing all trees and snags within the power line right-of-way that woodpeckers and other cavity nesters would most likely utilize for nesting and foraging. They would also be removing hazard trees outside the right-of-way, but would leave as many shorter trees (up to 8 feet tall) as possible to avoid the “clearcut” effect. These action alternatives would impact 12.7 acres of habitat with Alternative 2 and 10.2 acres of habitat with alternative 3. The actual acres of habitat impacted are small, and there is available habitat adjacent to the project area, but snags and downed-log habitat are not abundant in the area. To minimize possible indirect impacts from loss of this habitat, the mitigation measures described on page 13 for snags and logs should be implemented.

One of the possible indirect impacts by creating this power line corridor would be the increase of predators (especially accipiters and corvids) to cavity nesters in the area. This would mainly be notable where the power line would go through denser stands of trees.

If the project occurs during late summer through winter, direct impacts would be negligible. If the project were to occur during the spring to early summer when the birds would be nesting, the tree removal aspect of the project would likely have direct, negative impacts to woodpeckers and other cavity nesters. Disturbance during this time could result in nest failure or direct loss of individuals, thus the mitigation measure as described on page 13 should be adhered to.

With mitigation, the project would have no direct negative impact to woodpeckers or other cavity nester individuals or populations that occur within or adjacent to the project area.

Alternatives 4 and 5

Direct and Indirect Effects

These action alternatives would impact 1.4 acres of shrub and tree habitat. These alternatives go

through the Awbrey Hall Fire which burned in 1990. There is not a high density of trees that would need to be removed, but those that would need to be removed may be utilized by cavity nesters.

Indirect impacts to cavity nesters are not expected with these alternatives. If the project occurs during late summer through winter, direct impacts would be negligible. If the project is to occur during the spring to early summer when the birds would be nesting, the tree removal aspect of the project would likely have direct, negative impacts to woodpeckers and other cavity nesters. Disturbance during this time could result in nest failure or direct loss of individuals.

With mitigation, the project would have no direct negative impacts to woodpeckers or other cavity nester individuals or populations that occur within or adjacent to the project area.

Cumulative Effects

Minimal cumulative impacts are expected with action alternatives 4 and 5. Action alternatives 2 and 3 occur in an area that has had recent harvest activity and East Tumbull, the new project being planned for the area, has harvest units proposed within the entire area adjacent to the proposed power line corridors. The power line would already potentially invite predators into denser stands of forest. By proposing thinning to the denser stands that the power line corridor would go through, the probability of these predators filtering deeper into a stand from the edge the power line corridor would create is greater.

Bats: USFWS Species of Concern – Fringed, Long-eared, Long Legged, Small-footed, Yuma Myotis and Western big-eared bat

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No impacts would occur to bats with this alternative.

Alternative 2 (Proposed Action) and Alternative 3

Direct and Indirect Effects

These alternatives would be most likely to remove larger trees (greater than or equal to 21 inches diameter at breast height) and snags that bats would roost in. These action alternatives would impact 12.7 acres of shrub and tree habitat with Alternative 2 and 10.2 acres of shrub and tree habitat with Alternative 3. The actual acres of habitat impacted are small, and there is available habitat adjacent to the project area, but larger trees and snags are not abundant in the area. To minimize possible indirect impacts from loss of this habitat, the mitigation measure described on page 13 for snags should be adhered to.

There would be few, if any, indirect impacts to bat species. Midstate is willing to keep the right-of-way as primitive as possible. They would be removing larger trees and would request to remove hazard trees outside the right-of-way, but would leave as many shorter trees as possible to avoid the “clearcut” effect. The brush would mainly be impacted by logging activities. The power line right-of-way would still provide foraging habitat for bats.

If the tree removal portion of the project occurs during mid-fall through early spring, direct impacts would be negligible. There is a possibility that some bat species individuals could be directly impacted by removal of larger trees (greater than or equal to 21 inches diameter at breast height) and snags during mid spring to early fall. This would be the time of year that bats would be

roosting in these larger trees. Felling of trees or snags during this time could result in direct loss of individuals.

With mitigation measures described on page 13, the project would have no direct negative impact to bat individuals or populations that occur within or adjacent to the project area.

Cumulative Effects

No cumulative impacts are expected with these alternatives.

Alternatives 4 and 5

Direct, Indirect, and Cumulative Effects

No impacts or effects are expected under these alternatives as there are few large trees or snags available for roosting bats.

Neotropical Migratory Birds: USFWS Species of Concern Olive-sided Flycatcher

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

No impacts would occur to neotropical migratory birds with this alternative.

Alternative 2 (Proposed Action) and Alternative 3

Direct and Indirect Effects

These action alternatives would impact 12.7 acres of shrub and tree habitat with Alternative 2 (Proposed Action) and 10.2 acres of shrub and tree habitat with Alternative 3. The actual acres of habitat impacted is small, and there is available habitat adjacent to the project area for neotropical migratory birds.

One of the possible indirect impacts by creating this power line corridor would be the increase of predators to birds in the area, especially accipiters and corvids, and nest parasites such as the brown-headed cowbird. This would mainly be notable where the power line would go through denser stands of trees.

If the project occurs during late summer through winter, direct impacts would be negligible. If the project is to occur during the spring to early summer when the birds would be nesting, the tree removal aspect of the project would likely have direct, negative impacts to neotropical migrants. Disturbance during this time could result in nest failure or direct loss of individuals.

With mitigation, the project would have no measurable impact to neotropical migratory bird individuals or populations that occur within or adjacent to the project area.

Cumulative Effects

Alternatives 2 (Proposed Action) and 3 occur in an area that has had recent harvest activity, and has another out-year project area (East Tumbull) that has proposed harvest units within the entire area adjacent to the power line. The power line would already potentially invite predators and nest parasites into denser stands of forest. By proposing thinning to the denser stands that the power line corridor would go through, the probability of these predators and nest parasites filtering deeper into a stand from the edge the corridor would create is greater.

Alternatives 4 and 5

Direct and Indirect Effects

These alternatives would impact 1.4 acres of shrub and tree habitat. These alternatives go through the Awbrey Hall Fire which burned in 1990. Few trees would need to be removed.

Indirect impacts to neotropical migrants are not expected with these alternatives. Midstate is willing to keep the right-of-way as primitive as possible. Trees would most likely not need to be removed. The brush would mainly be impacted by the vehicular and equipment traffic during construction of the power line route. The actual acres of habitat impacted are small, and there is available habitat adjacent to the project area.

If the project occurs during late summer through winter, direct impacts would be negligible. If the project is to occur during the spring to early summer when shrub-nesting birds would be nesting, the equipment and vehicular traffic present and actual construction of the power line route could have direct, negative impacts to neotropical migrants. Disturbance during this time could result in nest failure or direct loss of individuals, thus the mitigation measures described on page 13 should be implemented.

With mitigation, the project would have no measurable impacts to neotropical migratory bird individuals or populations that occur within or adjacent to the project area.

Cumulative Effects

No cumulative impacts or effects are expected with the action alternatives 4 and 5.

ROADS AND TRANSPORTATION

AFFECTED ENVIRONMENT

There are numerous roads and trails within the project area. The road and trail system is immense and provides many opportunities for access. Some of the roads and trails are used for management of National Forest System lands and others have been created by dispersed recreation use and illegal use taking place within the project area. The numbers of 'user created' roads and trails is expected to increase due to development of adjacent private lands. Also, the area is a destination for various motorized and non-motorized year-round recreation use. This use occurs on open and closed roads and trails and the increase in use is anticipated to result in the creation of new and unapproved travel routes. Depending on the alternative selected, up to several miles of new road, although primitive, would be constructed to allow for installation of the power line.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

The project area encompasses 17.22 miles of system roads and an estimated 4.27 of non-system or 'user created' roads. The road density for the project area is 1.88 miles for system roads. Adding the estimated mileages for non-system roads, the road density increases to 2.35 miles per square mile. Both density calculations (system, system and non-system) are within the targets discussed in the LRMP. A formal project-level roads analysis was not conducted for this environmental

assessment.

There would be no measurable change to road densities if this alternative is chosen since no new roads will be constructed.

Alternative 2 (Proposed Action)

Direct, Indirect, and Cumulative Effects

Under this alternative, 3.5 miles of new, but primitive, road would be constructed. This would increase road densities to 3.2 miles per square miles within the project area. While road densities would increase, they would remain within the targets discussed in the LRMP. Increasing road density could increase negative impacts to deer and elk using the area both summer and winter. Although the road beneath the power line would not be considered open because of the Tumalo Winter Range closure, an additional road might allow for increasing the number of violators to the closure.

Alternative 3

Direct, Indirect, and Cumulative Effects

Under this alternative, 2.8 miles of new, but primitive, road would be constructed. This would increase road densities to 3.1 miles per square miles within the project area. While road densities would increase, they would remain within the targets discussed in the LRMP. Increasing road density could increase negative impacts to deer and elk using the area both summer and winter. Although the road beneath the power line would not be considered open because of the Tumalo Winter Range closure, an additional road might allow for increasing the number of violators to the closure.

Alternative 4 and Alternative 5

Direct, Indirect, and Cumulative Effects

Alternatives 4 and 5 would result in approximately 0.4 miles of new, but primitive, road being constructed on National Forest System lands. While road densities would increase, they would remain within the targets discussed in the LRMP.

It is recommended to utilize the mitigation measures discussed on page 13 to reduce road densities or to discourage use of roads. This portion of the project area receives a significant amount of illegal activity.

SILVICULTURE

AFFECTED ENVIRONMENT

The proposed power line location for both Alternative 4 and Alternative 5 are located entirely within the Awbrey Hall wildfire area. Because the area was recently burned, the vegetation within this wildfire area has not advanced beyond structural stage 1. Once the power line has been relocated, it is not likely to be relocated in the foreseeable future; due to the long-term impact, these effects are deemed to be irreversible.

Each alternative impacts acres of vegetation in direct proportion to the length of the relocated power line within the alternatives. There is currently 3.5 miles of power line corridor (30-foot wide) in the

project area.

Another way of estimating the impacts of the alternatives is the net loss of the number of acres of existing structural stages 3 through 6. (Structural stages 2 and 7 are not present within the potential power line relocation areas). The project area, and proposed power line routes would be within structural stages 3 through 6.

ENVIRONMENTAL CONSEQUENCES

All trees on the acres listed in Table 2 would be removed within a 30’ total width right-of-way. The resulting early structural vegetation would then be maintained over time to retain those acres in early structural stages 0 or 1. With repeated maintenance, the right-of-way vegetation would not advance beyond structural stage 1 (stand initiation).

Acres of National Forest System lands, and structural stages affected by each of the proposed alternatives are shown in Table 4. (Data is from the Deschutes base SS_SC11 photo interpretation GIS layer).

Table 4 Impacts (acres) to Forest Service Managed Vegetation by Alternative.

Structural Stages	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5**
Stages: 0, and 1 (Bare Ground or Stand Initiation)	No Impacts	zero acres net impact*	2.6 acres	1.3 acres	1.3 acres
Stages: 2, and 3 (Stem Exclusion; open or closed canopy)	None Present	None Present	None Present	None Present	None Present
Stages: 4, and 5 (Stand Re-initiation or Multi-Strata with no large trees)	No Impacts	7.7 Acres	6.1 Acres	None Present	None Present
Stage: 6 LOS (Multi-Strata; contains large trees)	No Impacts	1.4 Acres	0.8 Acres	No Impacts	No Impacts
Stage: 7 LOS (Single-Strata; consists of large trees)	None Present	None Present	None Present	None Present	None Present
TOTAL	No Impacts	9.2 Acres	9.5 Acres	1.3 Acres	1.3 Acres

* Under Alternative 2, the existing power line right-of-way (3.3 miles long) would be replaced by the proposed right-of-way. The proposed power line would impact the same amount of land, so the net change to this structural stage would be zero.

** Alternative 5 would bury the line below ground.

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

There would be no direct, indirect, or cumulative effects to vegetation by not implementing proposed project activities.

Alternative 2 (Proposed Action)

Direct and Indirect Effects

Alternative 2 is would result in 9.2 acres being taken out of timber production.

Alternative 2 converts 9.1 acres in structural stages 3 through 6 to structural stages 0 or 1.

Alternative 2 converts 1.4 acres of LOS (structural stages 6) to structural stage 0 or 1.

Cumulative Effects

The Midstate power line project is entirely within the boundary of the East Tumbull analysis area. Like most east side ponderosa pine stands, the surrounding forested area, due to heavy private land logging in the 1920s and 1930s, is below HRV for both single-strata and multi-strata stands of large trees. Because of the small size of the LOS stands affected under Alternatives 2 and 3 these alternatives would further reduce the amount of LOS within the area by non-significant amounts. Regardless of the power line location selected, additional impacts as a result of activities done under the East Tumbull analysis will be avoided.

Alternative 3

Direct, Indirect, and Cumulative Effects

Alternative 3 takes the most land out of timber production, 9.5 acres.

Alternative 3 converts the next largest amount, 6.9 acres of structural stages 3 through 6 to structural stages 0 or 1

Alternative 3 converts 0.8 acres of LOS (structural stages 6) to structural stage 0 or 1.

Alternative 4 and Alternative 5

Direct, Indirect, and Cumulative Effects:

Alternatives 4 and 5 both follow the same location on the ground and either one takes the least amount of area, 1.3 acres, out of timber production.

Structural stage vegetative impacts for alternatives 4 or 5 would be minimal in that no structural stage 3 through 6 stands would be converted to structural stages 0 or 1.

Alternatives 4 and Alternative 5 convert no LOS to earlier structural stages.

RANGE

AFFECTED ENVIRONMENT

There are no grazing allotments, and no livestock grazing within or near the project area. The nearest grazing allotment is the Bessie Allotment, approximately four miles southeast of the project area. Cattle are grazed in this allotment for the purpose of fuels reduction.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternatives 3, 4 and 5

Direct, Indirect, and Cumulative Effects

There would be no direct, indirect, or cumulative effects to not implementing project activities or by implementing one of the action alternatives, because grazing does not occur on or near the project area.

FIRE AND FUELS

AFFECTED ENVIRONMENT

Any power line relocation onto forested terrain, (as proposed in Alternatives 2 & 3) represents an increased fire risk over time if tree heights are such that they can fall over electrical lines and spark fires. The area to the west of Bend is of particular concern as most fires in this area move west to east (Bridge Creek 1979) or north to south (Awbrey Hall 1990 and Skyliner 1984). This risk could be eliminated by placing the power underground or mitigated by maintaining tree heights short enough to not threaten the power lines in windstorms, or during times of high snow-loading.

Chipping is very desirable from the standpoints that it removes the fire risk immediately and does not impact populated areas with smoke or create public anxiety. The costs to chip slash for Alternative 2 (Proposed Action) would be prohibitive.

Midstate may provide for chipping or piling the slash. However, the burning of any piles will need to be accomplished by Forest Service prescribed fire specialists.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct, Indirect, and Cumulative Effects

There would be no direct, indirect, or cumulative effects to fire and fuels by not implementing proposed project activities. The access road for power line maintenance itself may be basically impossible to close off to the public in this setting. There would be no additional access for the public.

Alternative 2 (Proposed Action)

Direct, Indirect and Cumulative Effects

The access road for power line maintenance itself may be basically impossible to close off to the public in this setting. Additional access for the public means more fires. Roads can often provide a barrier that could stop a fire. A road underneath a power line does not offer a safe setting for this endeavor.

Cumulative Effects

Alternative 3

Direct, Indirect, and Cumulative Effects

The access road for power line maintenance itself may be basically impossible to close off to the public in this setting. Additional access for the public means more fires. Roads can often provide a barrier that could stop a fire. A road underneath a power line does not offer a safe setting for this endeavor.

Alternative 4

Direct, Indirect, and Cumulative Effects:

The access road for power line maintenance itself may be basically impossible to close off to the public in this setting. Additional access for the public means more fires. Roads can often provide a barrier that could stop a fire. A road underneath a power line does not offer a safe setting for this endeavor.

This alternative is clearly the best above ground option from a fuels standpoint as there are currently no trees there that represent an ignition risk, and very little fuels work would be needed on the brush.

Alternatives 1 and 4 are currently brush and grass fuel models that do not pose as ignition sponsors to any power line move or no action option.

Alternative 5

Direct, Indirect, and Cumulative Effects

The access road for power line maintenance itself may be basically impossible to close off to the public in this setting. Additional access for the public means more fires. Roads can often provide a barrier that could stop a fire. A road underneath a power line does not offer a safe setting for this endeavor.

The risk of fires being started from trees touching power lines would be eliminated by placing the power underground.

PUBLIC HEALTH AND SAFETY

No significant adverse effects to public health or safety have been identified. The effects of implementation of the alternatives are well known, not highly controversial, and do not involve any unique or unknown risks. Effects meet or exceed state water and air quality standards.

ECONOMICS AND SOCIO-ECONOMICS

This section summarizes the economic effects from each alternative. The main factors affecting these values are the costs of constructing new power line and the associated corridor. There are also added costs of burying the power line (Alternative 5).

Alternative 1 (No Action):

There would be no costs, except for maintenance of existing corridor and replacement of existing wooden poles.

Alternative 2 (Proposed Action):

Costs of construction would be relatively high with this proposed route, as 3.5 miles of aerial line would be constructed. There would also be the cost of implementing the mitigation measures discussed at the beginning of Chapter 2. An example of some of the mitigation measures discussed are: taking measures to prevent spread of noxious weeds, avoiding heritage properties, closing or obliterating roads, relocating trails, and limiting activities during critical periods for wildlife. Please refer to a complete list of mitigation measures discussed on page 13.

Alternative 3:

Costs of construction would be less for this proposed route than Alternative 2 (Proposed Action), as 2.8 miles of aerial line would be constructed. There would also be the cost of implementing the mitigation measures discussed at the beginning of Chapter 2. An example of some of the mitigation measures discussed are: taking measures to prevent spread of noxious weeds, avoiding heritage properties, closing or obliterating roads, relocating trails, and limiting activities during critical periods for wildlife. Please refer to a complete list of mitigation measures discussed on page 13.

Alternative 4:

Costs of construction would be much less than Alternatives 2 (Proposed Action), 3, and 5 for this proposed route, as only 0.4 miles of new line would be constructed above ground. There would also be the cost of implementing the mitigation measures discussed at the beginning of Chapter 2. An example of some of the mitigation measures discussed are: taking measures to prevent spread of noxious weeds, avoiding heritage properties, closing or obliterating roads, relocating trails, and limiting activities during critical periods for wildlife. Please refer to a complete list of mitigation measures discussed on page 13.

Alternative 5:

Costs of construction would be greater for this alternative than for Alternative 4, because line would need to be buried underground where it crosses National Forest land. Burying the power line would increase the costs of construction by approximately \$750,000. Costs of construction for this alternative would still be less expensive than Alternatives 2 (Proposed Action) or 3.

There would also be the cost of implementing the mitigation measures discussed at the beginning of Chapter 2. An example of some of the mitigation measures discussed are: taking measures to prevent spread of noxious weeds, avoiding heritage properties, closing or obliterating roads, relocating trails, and limiting activities during critical periods for wildlife. Please refer to a complete list of mitigation measures discussed on page 13.

PRIME LANDS

There are no lands within the planning area that are classified as prime farm or rangelands. Proposed activities in Alternatives 2 (Proposed Action) through Alternative 5 would not change areas classified as prime forestland. There would be no direct, indirect, or cumulative adverse effect to these resources and thus are in compliance with the Farmland Protection Act and Departmental Regulation 9500-3, "Land Use Policy".

CIVIL RIGHTS AND ENVIRONMENTAL JUSTICE

Civil Rights legislation and Executive Order 12898 (Environmental Justice) direct an analysis of the proposed alternatives as they relate to specific subsets of the American population. The subsets of the general population include ethnic minorities, disabled people, and low-income groups. The purpose of the analysis is to determine whether adverse civil rights impacts are anticipated on an under represented population. The analysis is also to determine whether disparate or disproportionate impacts associated with the alternatives are anticipated. Provision of these benefits does not discriminate between subsets of the general population.

COMPLIANCE WITH STATE AND LOCAL LAWS

Implementation of Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternatives 3, 4, or 5 would be consistent with relevant Federal, State and local laws, regulations, and requirements designed for the protection of the environment including the Clean Air and Clean Water Act. None of the alternatives establishes a precedent for future actions or a decision in principle about a future consideration.

OTHER EFFECTS AND FINDINGS

Wetlands, fisheries, water quality and designated floodplains would not be adversely affected by any of the proposed management activities.

There would be no effects to Essential Fish Habitat from any alternative. Although the Upper Deschutes 4th field watershed is mapped by the National Marine Fisheries Service as Essential Fish Habitat for chinook salmon, there are no present or historical records of chinook populations above Big Falls on the Deschutes River, about 50 miles downriver from the project area.

No inventoried roadless areas, old growth stands, Wild and Scenic Rivers, or parkland would be adversely affected by the proposed activities.

No significant irreversible or irretrievable commitment of resources would occur under Alternative 2 (Proposed Action) or other action alternatives (Alternatives 3, 4, & 5). There would be some negligible irretrievable losses of dust caused by mechanical operations. There would be an irretrievable loss of firm wood fiber over the long-term under Alternative 1 (No Action), as existing dead lodgepole pine deteriorates in value and is unable to be utilized for commercial firm wood fiber.

The alternatives are consistent with the goals, objectives and direction contained in the Deschutes National forest Land and Resource Management Plan and accompanying Final Environmental Impact Statement and Record of Decision dated August 27, 1990 as amended by the Regional Forester's Forest Plan Amendment #2 (6/95) and Inland Native Fish Strategy. The alternatives are in compliance with the Upper Deschutes Wild and Scenic River and State Scenic Waterway Comprehensive Management Plan and accompanying Final Environmental Impact Statement and Record of Decision dated July 25, 1996.

PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS ADJACENT TO OR WITHIN THE PROJECT AREA

The following past, ongoing, or reasonably foreseeable actions were considered for the cumulative effects analysis:

- East Tumbull Planning Area – Vegetation Management – This project would include prescribed burning, mechanical shrub treatment, non-commercial thinning, commercial harvest, road closures, and associated activities – 2006.
- Existing Midstate Electric Cooperative Inc. power line corridors in the project area. There are currently about 3.5 miles of corridor for power lines in the project area.

- Development of subdivisions on privately owned land adjacent to the project area and the Forest boundary. This development is likely to occur within the next 5 to 10 years.

II. OTHER EFFECTS

All alternatives are in compliance with relevant federal, state and local laws, regulations, and requirements designed for the protection of the environment. None of the alternatives establishes a precedent for future actions, or a decision in principle about a future consideration.

1. Consumers, Civil Rights, Minority Groups, and Women

Effects on consumers, minorities and women are within the scope of effects described in the Final Environmental Impact Statement for the Deschutes Land and Resource Management Plan (LRMP 8/90).

2. Unique Landforms/Geologic Hazards

There would be no effect to unique characteristics of the geological or ecological resources, as none exist within or near the project area.

3. Effects on Noise

There would be some noise associated with this project during construction in both action alternatives, but it would be relatively short in duration and scale. Midstate estimates that it would take about four weeks to remove the existing power line, and about three months to construct the new power line.

4. Public Health and Safety

No adverse effects to public health or safety have been identified. The construction zones would be thoroughly marked on the ground and posted to inform the public of any cautions.

CHAPTER 4 – LIST OF PREPARERS AND AGENCIES CONSULTED

This section identifies the Forest Service personnel and others who participated in the analysis and the preparation of the EA, and other agencies consulted.

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Steve Bigby	District Road Manager
Marv Lang	Recreation Planner
Tom Walker	Fisheries Biologist
Ronnie Yimsut	Landscape Architect
Janine McFarland	Archaeologist
Paul Brna	Silviculturist
Bill Bickers	Fire and Fuels Specialist
Doug Spaeth	Writer/Editor

MIDSTATE ELECTRIC COOPERATIVE, INC.

Darwin Thurston	Operations/Engineering Manager
Ron Cass	Midstate Electric Cooperative, Inc., General Foreman

AGENCIES CONSULTED

Oregon Department of Fish and Wildlife (ODFW)

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