United States
Department of
Agriculture

**Forest
Service**

March 2008

Environmental Assessment

Bridge Thin Project

Chapters 1- 4 ----- Volume 1

McKenzie River Ranger District
Willamette National Forest
Lane County, Oregon

Legal Locations: Within T.15S, R.4E, T.15S, R.5E, T.16S, R.4E, T.16S, R.5E;

Willamette Meridian

For Information Contact: **Shane Kamrath, Project Leader**
McKenzie River Ranger District
57600 McKenzie Highway
McKenzie Bridge, Oregon 97413
541-822-7233

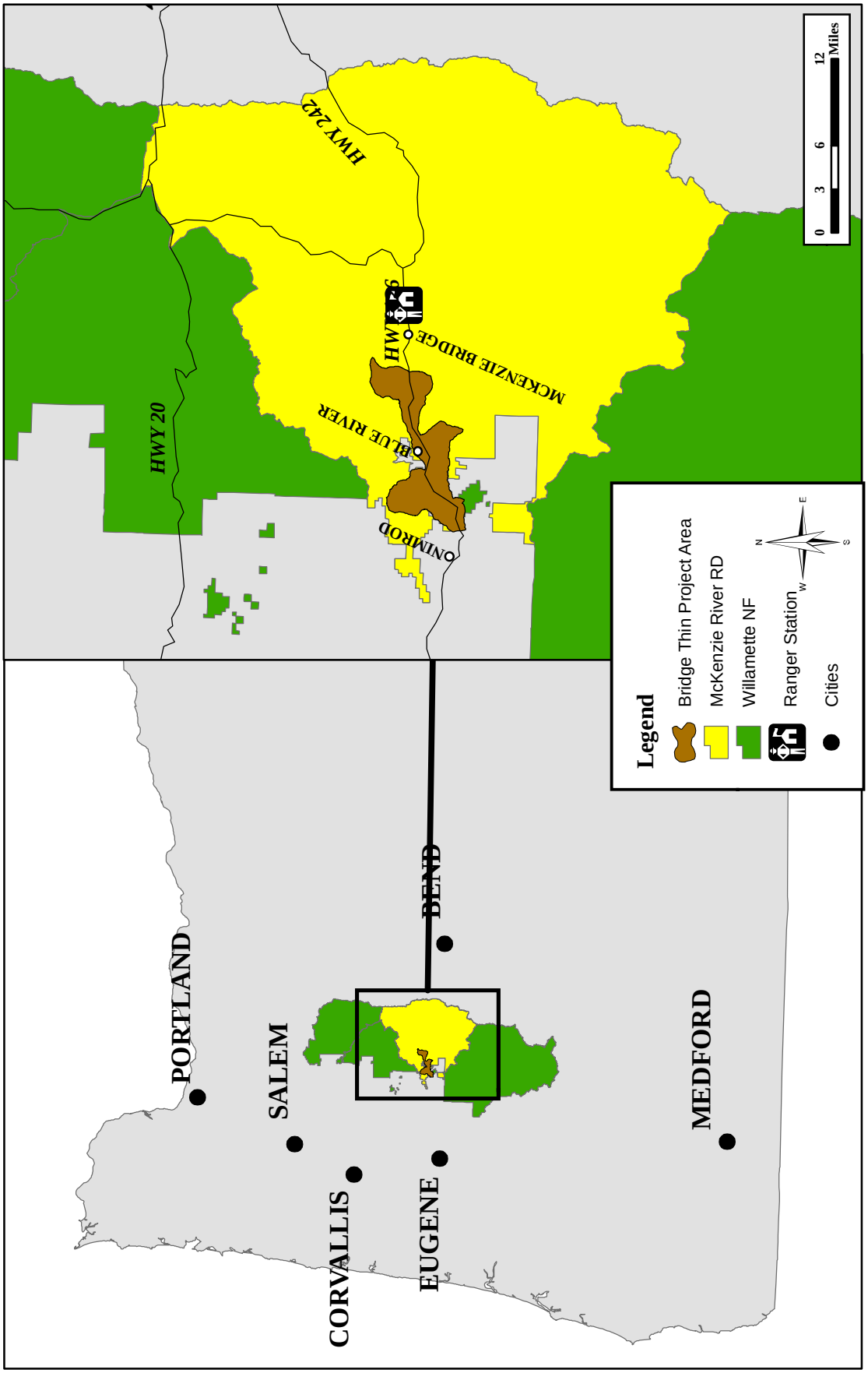

Figure 1. Bridge Thin Project location map.

Table of Acronyms:

ACS	Aquatic Conservation Strategy
ARP	Aggregate Recovery Percentage (hydrologic recovery)
BGEA	Big Game Emphasis Area
CWPP	Community Wildfire Protection Plan
dbh	Diameter breast height
DN/FONSI	Decision Notice/Finding of No Significant Impact
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
EWEB	Eugene Water And Electric Board
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
IDT	Inter-disciplinary Team
IRA	Inventoried Roadless Area
LFH	Listed Fish Habitat
MIS	Management Indicator Species
MRRD	McKenzie River Ranger District
MMBF	Million Board Feet
NEPA	National Environmental Policy Act
NFS	National Forest System
NMFS	National Marine Fisheries Service
ODOT	Oregon Department of Transportation
OSHA	Occupational Safety and Health Administration
ODFW	Oregon Department of Fish and Wildlife
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Office
SOPA	Schedule of Proposed Actions
TES	Threatened, Endangered, or Sensitive Species
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VQO	Visual Quality Objective
WA	Watershed Analysis
WFP	Willamette Forest Plan
WNF	Willamette National Forest
WUI	Wildland Urban Interface

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Chapter 1. Purpose and Need for Action

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. The document is organized into four chapters and appendices:

- **Chapter 1-Purpose and Need for Action:** This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. A section is included that details how the Forest Service informed the public of the proposal and how the public responded. This section also includes the relationship of the proposal to the 1990 Willamette Forest Plan, as amended.
- **Chapter 2 –Alternatives, Including the Proposed Action:** This section provides a more detailed description of the agency's proposed action as well as an alternative method for achieving the stated purpose. The alternative was developed based on significant issues raised by the public and other agencies. This discussion also includes a listing of mitigation measures and design features. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- **Chapter 3 -Environmental Consequences:** This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis discloses the effects on significant issues and the other issues addressed during scoping. Within each section, the affected environment is described first, followed by the effects from Alternative A – No Action, which provides a baseline for evaluation and comparison, Alternative B – Proposed Action, and Alternative C.
- **Chapter 4 - Consultation and Coordination:** This section provides a list of agencies, tribal governments, elected officials, and public consulted during the development of the environmental assessment. It also includes a list of IDT members who were involved in preparing this document.
- **Appendices:** The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including detailed analyses of project-area resources, may be found in the project planning record, or analysis file, located at the McKenzie River Ranger District Office in McKenzie Bridge, Oregon.

Introduction

The Bridge Thin Project area is within the McKenzie River / Elk Creek Subwatershed (6th field) of the McKenzie River/Quartz Creek Watershed (5th Field). The project area consists of 20,657 acres located between Finn Rock and McKenzie Bridge (See Figures 1 and 2).

Legal description of the project: Legal Locations: Within T.15S, R.4E, T.15S R.5E, T.16S, R.4E, T.16S, R.5E; Willamette Meridian; Lane County, Oregon.

Purpose and Need for Action

The purpose and need for this project is to improve stand conditions in terms of species composition, density, and structure over the long term in managed stands up to 80 years of age and fire regenerated stands generally up to 120 years of age. The amended Willamette Forest Plan includes goals and objectives for managing stands with silvicultural techniques to maintain stand health and vigor and provide multiple use benefits, moving the project area toward the desired condition.

Actions Are Needed To ➔
• Restore structural diversity in stem exclusion stands to enhance wildlife habitat;
• Accelerate restoration of late-successional conditions for stands within riparian reserves;
• Restore "open oak savannah" stands where they were historically present;
• Provide a sustainable supply of wood in support of the local and regional economy.
• Restore degraded roads infrastructure;
• Protect and maintain water quality and reduce hazardous fuel levels in the watershed for communities in the wildland-urban interface;
• Improve the role of fire as a natural disturbance process in the ecosystem.

Restore Structural Diversity in Stem Exclusion Stands to Enhance Wildlife Habitat

Overstocked, dense, stem exclusion stands are limited in providing quality wildlife habitat. A need exists to restore structural diversity through techniques such as variable density thinning with skips and gaps.

Accelerate Restoration of Late-Successional Conditions for Stands within Riparian Reserves

Dense, overstocked, stem exclusion stands in riparian reserves are limited in providing late successional conditions to allow connectivity between late successional reserves on the landscape. A need exists to restore late successional stand conditions through treatments, such as thinning, which can accelerate development of large trees and multi-storied stands.

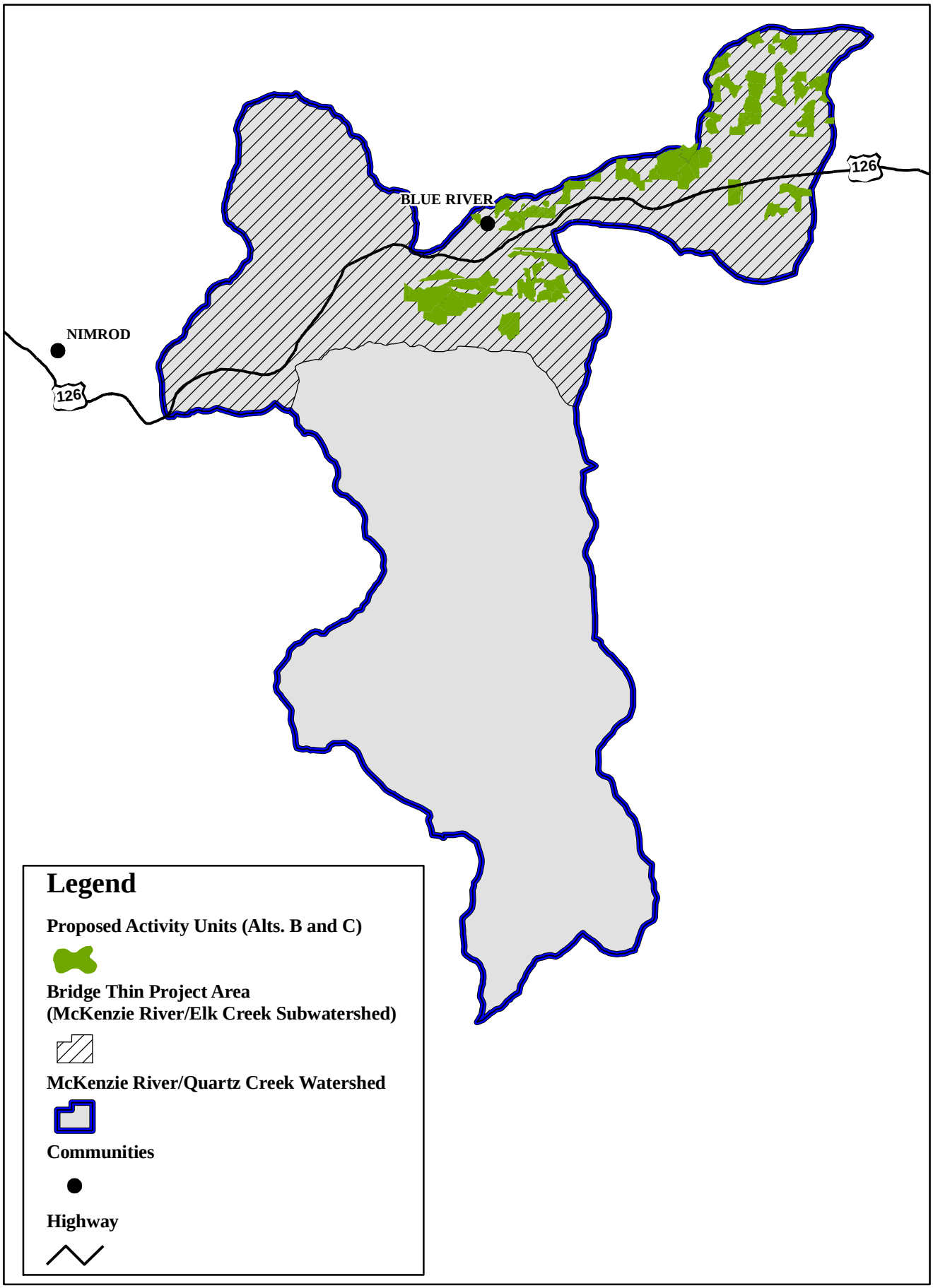

Figure 2. McKenzie River/Quartz Creek Watershed map.

Provide a Sustainable Supply of Wood In Support of the Local and Regional Economy.

This project is located predominately within the Adaptive Management Area allocation, as designated in the 1990 Willamette National Forest Land and Resource Management Plan, as amended (Willamette Forest Plan or Forest Plan) (USDA Forest Service. 1990). There is need to manage the project area to provide multiple-use benefits, as directed in the Willamette National Forest Land and Resource Management Plan, which includes an expected output of timber products at the optimum level to meet the long-term sustained-yield capacity. The Willamette Forest Plan describes the goal to meet timber outputs at IV-227, and sets forth Standards and Guidelines for harvest scheduling at FW-176 and 177.

The Northwest Forest Plan Final Supplemental Environmental Impact Statement (USDA Forest Service and USDI Bureau of Land Management. 1994), which led to the Record of Decision and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl (USDA Forest Service and USDI Bureau of Land Management. 1994a) amended the Willamette Forest Plan. It recognizes that "the need for forest products from forest ecosystems is the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies on a predictable and long-term basis" (page 1-4).

Restore "Open Oak Savannah" Stands Where They Were Historically Present

Remnant pockets of Oregon White Oak are scattered throughout the landscape. This unique habitat is being encroached upon by conifers. A need exists to restore this unique habitat by reducing conifer encroachment and restoring fire to the ecosystem.

Restore Degraded Roads Infrastructure

The forest roads in this planning area have a wide range of conditions and maintenance needs. The current road system was built to access timber and other forest resources. Timber sale revenues paid for the majority of past construction and road maintenance. However, timber harvest has declined under the Northwest Forest Plan. This change in forest management has seriously reduced the operating budget and the ability to maintain the road system. Maintenance of degraded roads in the project area is needed to access areas for management with minimum impact to other resources.

Protect and Maintain Water Quality and Reduce Hazardous Fuel Levels in the Watershed for Communities in the Wildland-Urban Interface

Reducing hazardous fuels decreases the potential severity of wildfires across the landscape, including stands adjacent to streams. The reduction of fuels levels is needed to protect life and property in the area, as well as to protect and maintain water quality. Bridge Thin Project Area treatments would reduce the hazardous fuels in streamside stands and the Wildland Urban Interface.

Improve the Role of Fire as a Natural Disturbance Process in the Ecosystem

Fire has and will continue to play an active and vital role in our forest ecology. Treatments in this project would help to return the ecological role of fire disturbance. Prior to European settlement,

natural and human-induced fires helped create and maintain a diversity of ecosystems across the landscape. Over the past century Forest Service management has altered the natural disturbance process through fire suppression efforts. This change or lack of disturbance increases the probability of large high severity (high mortality) wild fires across the landscape. Improving the role of fire is needed to decrease the potential of large, high severity wildfires, and to move the ecosystem closer to the natural disturbance process.

Proposed Action

The Forest Supervisor on the McKenzie River Ranger District proposes to conduct activities on approximately 2,463 acres of the Bridge Project Area. The proposed activity acres include timber harvest (2,256), fuel treatments (193), and rock quarry/borrow pits use (14). The timber harvest would yield a gross estimate of 47.8 million board feet (MMBF) of wood products. This proposal, represented in Alternative B in this EA, would include heavy thinning on 1,368 acres, moderate thinning on 391 acres, oak savanna restoration on 30 acres, wildlife forage thinning on 190 acres, and riparian thinning on 145 acres. The timber sales from this proposal would likely be sold over a three year time span, beginning in fiscal year 2008.

The proposal also includes the activities listed below, which are described in detail in Chapter 2:

Proposed Action Activities
• **Yarding Systems:** Ground-based yarding systems would be used on approximately 770 acres, skyline yarding would occur on 960 acres, and helicopter yarding on 520 acres. Eight helicopter landings, each approximately 1/2 acre in size, would be located in the project area.
• **Open Oak Savanna Restoration:** Encroaching conifers would be harvested and the area underburned to maintain the open oak dominated hillside. The stands are remnant pockets of Oak Savanna which are being encroached upon by conifers. Shade resulting from the encroaching conifer species is hampering the regeneration of the Oregon White Oak (*Quercus qarryana*). The Oak Savanna habitat relies on fire to reduce competition from conifers and give the slower growing, more shade intolerant oak better opportunities to propagate. Oak savanna restoration would be anticipated to occur within 5 years after the project decision.
• **Post-harvest Planting:** In group selects created from root rot pockets, follow-up planting with species that are non-susceptible to the species of root disease may occur to augment natural regeneration. In random group selects stocking will be evaluated two years post harvest to evaluate needs. If a planting need is determined, underrepresented species will be planted to augment natural regeneration.
• **Subsoiling:** Soil would be ripped to promote regeneration and provide a suitable environment for future growth. Subsoiling is used to offset compaction from equipment where the harvest prescription resulted in little to no residual stand and no further silvicultural treatments will be necessary for 40 or more years. Group selects and/or the Oak Savannah will potentially have subsoiling needs if ground based operations create compaction within the unit or landings.

- **Road Closures and Decommissioning**: Activities are proposed to close Forest roads in the project area to reduce erosion and improve wildlife habitat. The proposed action would close a total of 0.2 miles of currently open road, by placement of an earthen berm. Decommissioning (the obliteration of an existing system road) is planned for 0.3 miles of currently closed roads.

- **Road Maintenance:** Forest roads used for timber haul that do not currently meet Forest standards for safety and haul suitability would receive road maintenance prior to use. Appropriate road maintenance would be performed on approximately 34 miles of Forest roads during operations and upon completion of sale activities. Part of the road maintenance activities would be the replacement of 42 culverts in the project area. This would include the replacement of the culvert at the Mill Creek crossing on road 2633-720 would be improved to pass 100-year flows, also allowing passage for aquatic wildlife species. Proposed Road maintenance activities would occur within 5 years of the project decision.

- **Temporary Road Construction:** The proposed action requires the connected action of constructing 25,500' of temporary roads to access proposed timber harvest units in the Bridge Thin Project area. Temporary roads would be decommissioned after the logging operations are completed. The construction and decommissioning of temporary roads in the project would occur within 5 years of the project decision.

- **Rock Quarry Development:** The proposed action requires the connected action of expanding an existing Rock Quarry. The Mill Creek Rock Quarry is located on Forest Road 2633-720. The development of the Rock Quarry is needed to supply crushed rock and riprap for maintaining roads accessing the Bridge Thin Project area. It is estimated that less than 15,000 cubic yards of crushed rock and riprap would be needed. Blasting would be part of the rock pit expansion. Resulting noise impacts on wildlife are considered in the analysis. Expansion of the existing Mill Creek Quarry would be conducted within 5 years of the project decision.

- **Wildland Urban Interface (WUI) Fuels Thins/Natural Fuels Underburn:** WUI fuel thins would take place on approximately 142 acres (Units 50, 89, 95-99, 101-103). The thinning treatment would target trees and shrubs <7" DBH, and fuels created would be piled and burned or chipped/mulched where feasible. Natural fuels underburns would take place to reintroduce the natural disturbance of fire on approximately 51 acres in units 86, 87, and 100 and reduce ladder fuels that contribute to potentially severe wildfire. Vegetation would not be harvested or mechanically altered in stands subject to natural fuels underburn; only fire would be applied to change the horizontal and vertical arrangement of fuels. Units 86 and 87 would only be underburned if surrounding units are also treated. The proposed fuels treatments would occur within 5 years of the project decision.

- **Logging Slash Fuels Treatment:** Slash would be treated with underburning or burning landing piles, hand piles, and machine piles after harvest. These treatments would reduce the slash fuels created by timber harvesting and reintroduce the disturbance process of fire to the landscape within the harvest units. Logging systems design would help to reduce concentrations of slash in units that cannot be underburned without unacceptable impacts to the residual stand. Slash fuels may be pre-bunched in units where ground and skyline operations occur. The logging slash fuel treatments would occur within 5 years of the project decision.

Non-Significant Forest Plan Amendment #50

This non-significant amendment includes a one-time exemption of Management Area Standard and Guideline MA-5a-01.

MA-5a-01: An Implementation Guide shall be prepared for each SIA (Special Interest Area) describing the site specific management objectives, enhancement programs, and other acceptable uses and activities.

An Implementation Guide has not been completed for the MA-5a land allocation (McKenzie River SIA) within the project area. However, all action alternatives were developed while considering site specific management objectives, enhancement programs, and other acceptable uses and activities within this management area. These criteria would be incorporated into the Implementation Guide that would be subsequently prepared for the project area to guide future management.

No commercial timber harvest would occur within the McKenzie River SIA. Activities within the McKenzie River SIA are focused on fuel reduction to decrease the potential for high intensity wildfires in the Wildland Urban Interface (WUI).

Decision Framework

The Responsible Official for this proposal is the Willamette National Forest Supervisor. Given the purpose and need stated above, the Responsible Official reviews the proposed action and the other alternative actions in order to make the following determinations:

- The proposed actions as analyzed, comply with the applicable standards and guidelines found in the Willamette Forest Plan and all laws governing Forest Service actions.
- Sufficient site-specific environmental analysis has been completed.
- The proposed actions benefit the public and are in their best interest.

With these assurances the Responsible Official must decide:

- Whether or not to select the Proposed Action or one of the alternatives, which includes the No-Action Alternative; and what, if any, additional actions should be required.
- Whether the selected alternative is consistent with the Willamette Forest Plan, or if the Forest Plan shall be amended in this action.

Tiering and Incorporating by Reference

In order to eliminate repetition and focus on site-specific analysis, this EA is tiered to the following documents as permitted by 40 CFR 1502.20:

- The Willamette National Forest Land and Resource Management Plan (Forest Plan) FEIS and Record of Decision (ROD) dated July 31, 1990, and all subsequent NEPA analysis for amendments, including the April 1994, Record of Decision for Amendments to Forest Service

and Bureau of Land Management Planning Documents Within the Range of the Spotted Owl, or Northwest Forest Plan (USDA Forest Service and USDI Bureau of Land Management. 1994a), and the accompanying Land and Resource Management Plan, as amended. The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Willamette National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

- This EA also tiers to a recent broader scale analysis for invasive plants (the Pacific Northwest Region Final Environmental Impact Statement for the Invasive Plant Program, 2005, hereby referred to as the R6 2005 FEIS) (USDA Forest Service. 2005). The R6 2005 FEIS culminated in a Record of Decision (R6 2005 ROD) that amended the Willamette National Forest Plan by adding management direction relative to invasive plants. This project is intended to comply with the new management direction. Proposed actions would also incorporate measures contained in the December 1988, Record of Decision and FEIS for Managing Competing and Unwanted Vegetation, and the requirements of the Mediated Agreement, signed May 24, 1989 by USFS, NCAP, OFS, et al.

The Forest Plan

The Willamette Forest Plan, as amended, provides resource management goals and gives direction to apply a range of harvest methods to timber stands. Chapters II and III from the FEIS discuss silvicultural activities expected to occur on suitable lands on the Forest. Appendix F from the FEIS further documents the rationale used to determine the appropriate harvest systems to be used in managing coniferous forests on the Willamette National Forest where timber production is a management goal.

Table 1 displays Management Area acres as designated in the amended Willamette Forest Plan (WFP) for the project area. The table also includes the overlying land allocations from the 1994 Northwest Forest Plan. Five of the six Northwest Forest Plan (NWFP) allocations are present and consist of Adaptive Management Area, Administratively Withdrawn, Late-Successional Reserves, Matrix, and Riparian Reserves. However, because Riparian Reserves overlap with other land allocations, they are not represented in the table. The intent is to accurately display WFP Management Area acres. Riparian Reserves within harvest units are displayed in Chapter 3, in the Water Quality/Aquatic Resources section. Management areas corresponding to both the WFP and the NWFP within the Bridge Thin project area are displayed in Figures 3 and 4. All proposed activity units are located in the Adaptive Management Area NWFP land allocation.

Table 1. Management Areas within the Project Area*.

Willamette Forest Plan Management Areas	Northwest Forest Plan Land Allocations	Total Acres	Acres in Activity Units
5a – Special Interest Areas	*Administratively Withdrawn*	17	0

Willamette Forest Plan Management Areas	Northwest Forest Plan Land Allocations	Total Acres	Acres in Activity Units
5a – Special Interest Areas	*Adaptive Management Area*	925	71
7 – Old Growth Groves	*Adaptive Management Area*	113	0
9c – Wildlife Habitat-Marten	*Administratively Withdrawn*	43	0
9c – Wildlife Habitat-Marten	*Adaptive Management Area*	56	0
9d – Wildlife Habitat-Special Areas	*Adaptive Management Area*	769	295
11a – Scenic-Modification Middleground	*Late Successional Reserves*	139	0
11a – Scenic-Modification Middleground	*Adaptive Management Area*	1,188	480
11c – Scenic-Partial Retention Middleground	*Matrix*	29	0
11c – Scenic-Partial Retention Middleground	*Late Successional Reserves*	694	0
11c – Scenic-Partial Retention Middleground	*Adaptive Management Area*	2,975	1,085
11e – Scenic-Retention Middleground	*Late Successional Reserves*	183	0
11e – Scenic-Retention Middleground	*Adaptive Management Area*	805	348
11f – Scenic- Retention Foreground	*Adaptive Management Area*	1,015	184
14a – General Forest	*Matrix*	9	0
16a – Late Successional Reserves	*Late Successional Reserves*	2,944	0
16b – 100-acre Late Successional Reserves	*Late Successional Reserves*	39	0
17– Adaptive Management Area	*Adaptive Management Area*	118	0
Non-USFS Lands		8,696	0
Total Acres		**20,657**	**2,463**

The following briefly discusses the goals of the Forest Plan Management Areas where harvest units or other management actions are included in action alternatives. See Chapter 2, Tables 2, and 4, for prescriptions by alternative.

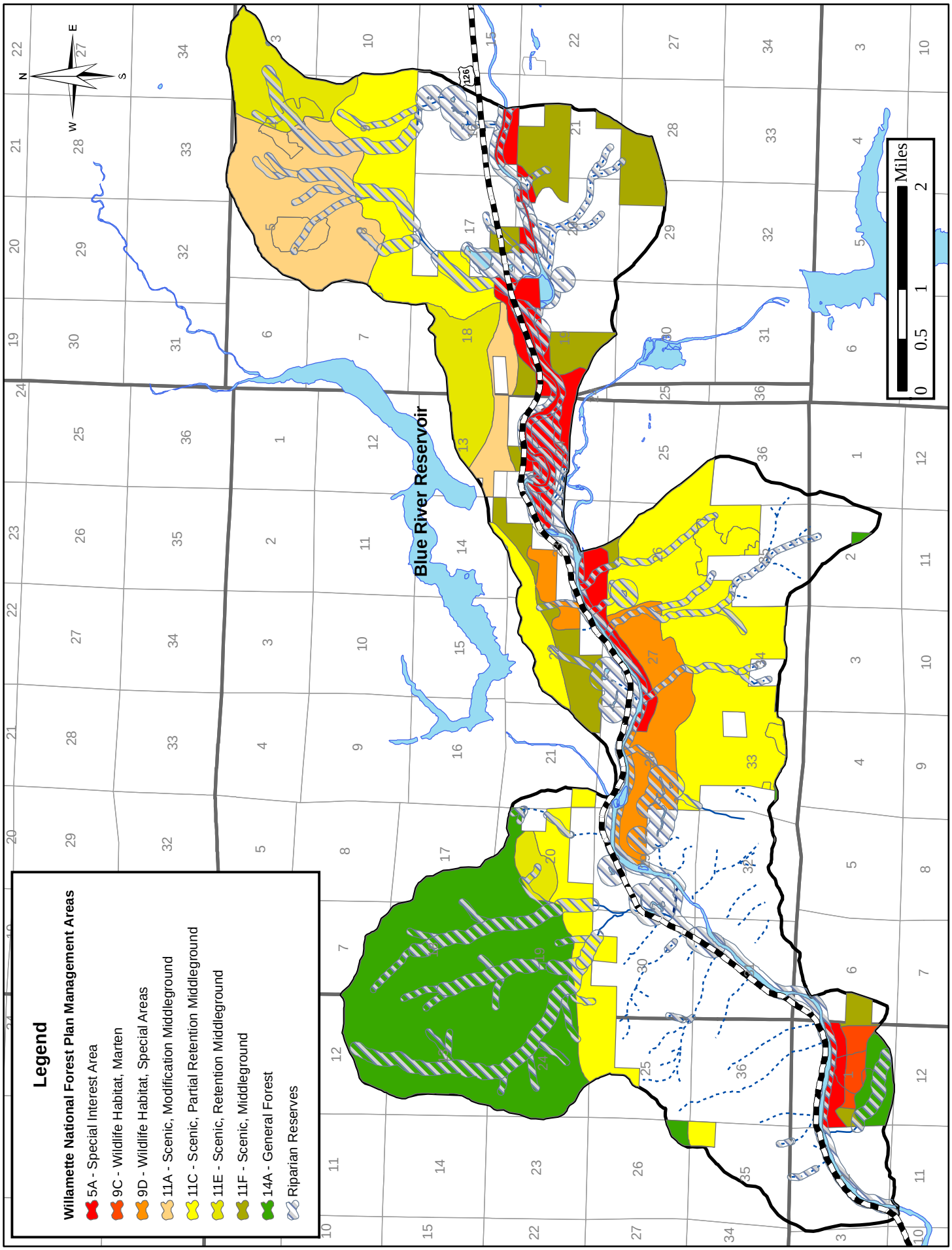

Figure 3. Willamette National Forest Plan Management Areas in the Bridge Thin Project Area.

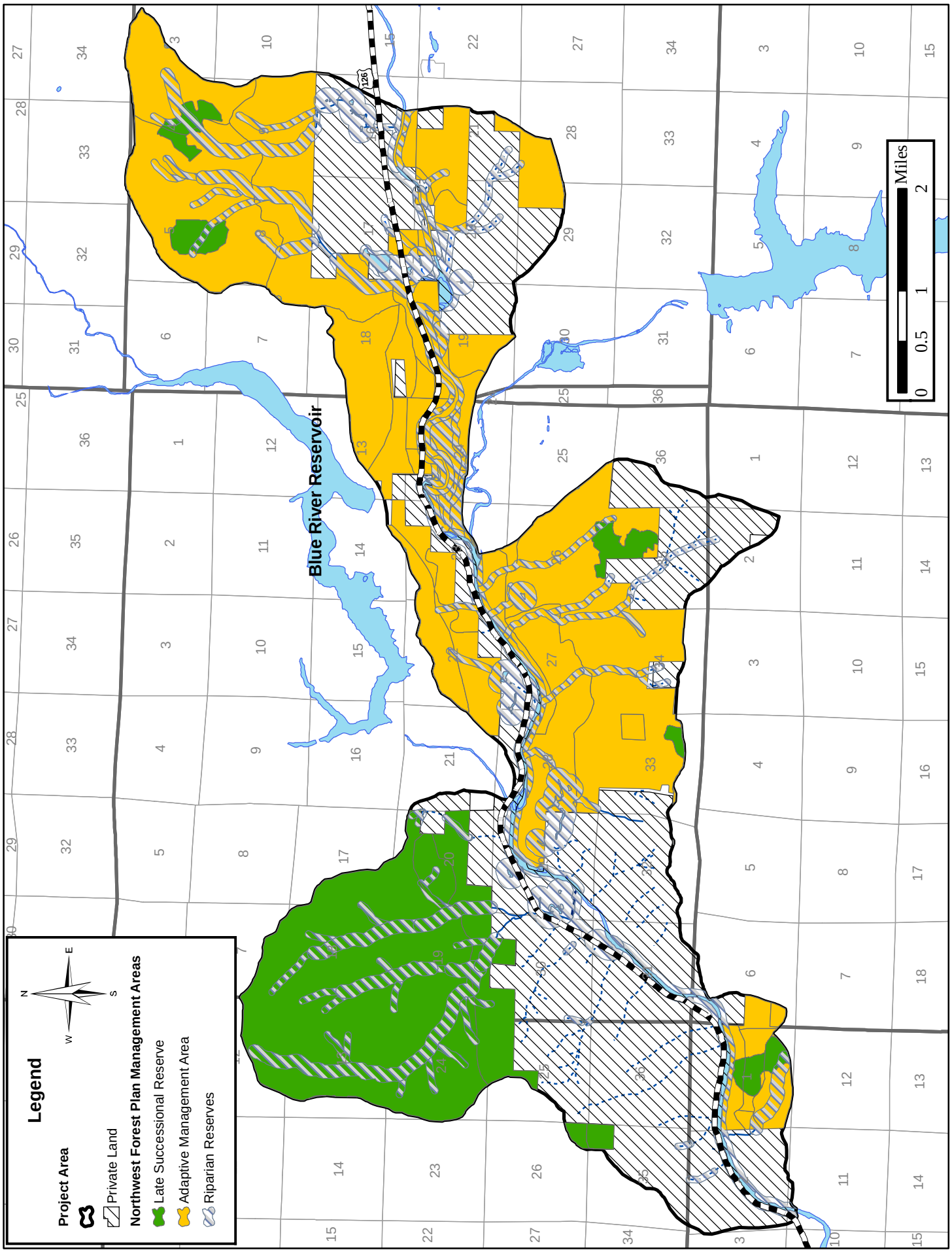

Figure 4. Northwest Forest Plan Management Areas in the Bridge Thin Project Area.

MA-5a, Special Interest Area –McKenzie River

Activity units partially or entirely within MA-5a: *95, 97, 98, 100, 102, and 103.*

The goals of these management areas are to: 1) Preserve lands that contain exceptional scenic, cultural, biological, geological, or other unusual characteristics, and 2) Foster public use and enjoyment in selected special interest areas through facility development. No programmed timber harvest shall be scheduled. Cutting and removal of vegetation shall be prohibited except to provide for the safety of users or to maintain or the values of the area.

No commercial timber harvest would occur within MA-5a. Activities within this area would be focused on fuel reduction to decrease the potential for high intensity wildfires in the Wildland Urban Interface (WUI).

MA-9d, Wildlife Habitat – Special Areas

Activity units partially or entirely within MA-9d: *1, 3, 6, 7, 8, 10, 21, 84, 85, 86, 88, and 841.*

The goal of these management areas is to protect or enhance unique wildlife habitats and botanical sites that are important components of healthy, biologically diverse ecosystems. No programmed timber harvest shall be scheduled. Vegetative treatments, including commercial harvests, should be permitted if necessary to meet established wildlife objectives. Sustained timber production is not a Management Area objective.

Timber harvest units 84, 85, and 86 are in a unique oak savannah area. An objective of this area is to protect and enhance this unique habitat.

MA-11a, Scenic, Modification Middleground

Activity units partially or entirely within MA-11a: *26,29, 30,32, 35, 41,42, 43, 44, 45, 46, 47, 48, 52, 53, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, and 70.*

The goal of this management area is to create and maintain desired visual characteristics of the forest landscape through time and space. Visually sensitive landscapes would be managed for a modest level of scenic quality. This area would also be managed for other resource goals including timber production, recreational opportunities, watershed protection, and maintenance of wildlife habitat. The maximum area in a disturbed condition should not exceed 24% of the acres available and suited for timber harvest in this management area.

This allocation is primarily located along the mid-slopes of the McKenzie River valley in the Bridge Thin Project area. It consists of the middleground viewshed along the north side of State Highway 126. State Highway 126 is a major state transportation route and is included in the McKenzie-Santiam Pass National Scenic Byway system.

MA-11c, Scenic, Partial Retention Middleground

Activity units partially or entirely within MA-11c: *1, 2, 4, 5, 6, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 35, 36, 37, 38, 39, 40, 41, 44, 49, 50, 51, 54, 55, 56, 58, 59,67, 68,69, 70, 71, 72, 80, 81, 82, 83, 84, 89, and 91.*

The goals for this visually sensitive management area are to maintain a moderate level of scenic quality, and also to manage for other resource goals including wildlife habitat, recreation, watershed,

and timber production. The maximum area in a disturbed condition should not exceed 20% of the acres available and suited for timber harvest in this management area.
This allocation is primarily located along the mid-slopes of the McKenzie River valley in the Bridge Thin Project area. It consists of the middleground viewshed along both sides of State Highway 126 and below Blue River Reservoir.

MA-11e, Scenic, Retention Middleground

Activity units partially or entirely within MA-11e: *29, 30, 31, 32, 33, 34, 35, 36, 37, 56, 57, 58, 59, 60, and 69.*

The goal of this management area is to create and maintain desired visual characteristics of the forest landscape through time and space. Visually sensitive landscapes would be managed for a high level of scenic quality. This area would also be managed for other resource goals including maintenance of wildlife habitat, recreational opportunities, watershed protection, and timber production. The maximum area in a disturbed condition should not exceed 14% of the acres available and suited for timber harvest in this management area.

This allocation is primarily located along the mid-slopes of the McKenzie River valley in the Bridge Thin Project area. It consists of the middleground viewshed along the north side of State Highway 126.

MA-11f, Scenic, Retention Foreground

Activity units partially or entirely within MA-11f: *27, 28, 80, 81, 82, 83, 84, 87, 88, 89, 91, 95, 96, 97,98, 99, 100, 101, 102, 103*

The goal of this management area is to create and maintain desired visual characteristics of the forest landscape through time and space. Visually sensitive landscapes would be managed for a high visual quality. This area would also be managed for other resource goals including maintenance of wildlife habitat, recreational opportunities, watershed protection, and timber production. The maximum area in a disturbed condition should not exceed 10% of the acres available and suited for timber harvest in this management area.

This allocation is primarily located along the mid-slopes of the McKenzie River valley in the Bridge Thin Project area. It consists of the middleground viewshed along the north side of State Highway 126.

MA-15, Riparian Reserves

Timber harvest units which include riparian reserves are listed in Chapter 2, Table 2.
Riparian Reserves are one of the six designated management areas identified in the Northwest Forest Plan. The primary goal for lands located in this management area is to maintain the ecological function of rivers, streams, wetlands, and lakes within the landscape.

Riparian Reserves include at least the water body, inner gorges, all riparian vegetation, 100-year floodplain, landslides, and landslide-prone areas. Reserve widths are based on either a multiple of the site-potential tree or a prescribed slope distance, whichever is greater. Reserve widths may be adjusted based on watershed analysis to meet Aquatic Conservation Strategy (ACS) objectives. The

ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands by maintaining and restoring ecosystem health at watershed and landscape scales. The intent is to protect habitat for fish and other riparian-dependent species and to restore currently degraded habitats.

All action alternatives have management activities that occur in Riparian Reserves, such as thinning, activity fuels treatments, natural fuels prescribed underburning, and road restoration projects are designed to be consistent with ACS objectives.

Public Involvement

Scoping is the process for determining issues relating to a proposed action and includes review of written comments, distribution of information about the project, interdisciplinary Team (IDT) meetings, and local news releases.

Scoping began on the Bridge Thin Project under the current proposed action on May 18, 2007. The McKenzie River Ranger District sent a public scoping letter with preliminary information about this EA to a project mailing list of 54 interested individuals, agencies, tribal governments, and elected representatives. The scoping letter described the proposed action, a purpose and need for action, a summary of the proposed action, a brief summary of preliminary issues, and alternatives actions. The Bridge Thin Project has been listed in the Forest Focus – the quarterly schedule of proposed actions (SOPA) for the Willamette National Forest, since December 11, 2006

Issues

Issues are points of concern about environmental effects that may occur as a result of implementing the proposed action. They are generated by the public, other agencies, organizations, and Forest Service resource specialists and are in response to the proposed action.

Significant issues describe a dispute or present an unresolved conflict associated with potential environmental effects of the proposed action. Significant issues are used to formulate alternatives, prescribe mitigation measures, and focus the analysis of environmental effects. Significant issues are also determined based on the potential extent of their geographic distribution, duration of their effects, or intensity of interest or resource conflict, if not mitigated or otherwise addressed. The significant issues for this project were identified by the ID Team and approved by the Responsible Official.

Significant issues are tracked through Issue Identification (Chapter 1), Alternative Development and Description (Chapter 2), and Environmental Consequences (Chapter 3). Measurement criteria have been identified for the significant issues and are used to compare alternatives. These criteria are shown in comparison in Table 11 at the end of Chapter 2.

In addition to the significant issues, other issues or non-significant issues were raised by the public or Forest Service resource specialists. These issues were determined to be non-significant because they were; 1) outside the scope of the proposed action, 2) already decided by law or regulation, Forest Plan, or other higher level decision, 3) irrelevant to the decision to be made, or 4) conjectural and not supported by scientific or factual evidence. These issues are less focused on the elements of the

purpose and need for action and did not influence the formulation of alternatives. Several of the non-significant issues are also included in the environmental effects analysis (Chapter 3) because of regulatory or policy direction.

Significant Issues

Issue 1. Water Quality/Aquatic Resources

Past management activities have resulted in impacts to the riparian and aquatic resources of the analysis area. Proposed management activities such as timber harvest, prescribed fire, and road construction can adversely affect water quality, and aquatic and riparian habitat. The most common impacts include: reduction of large wood available for input to streams, removal of shading vegetation, and increases in sedimentation. These effects can result in simplification or elimination of fish and other aquatic habitat, and degradation of water quality with respect to elevated stream temperatures and increases in sediment delivered to streams. However, these same proposed management activities can positively affect these resources by creating stand conditions that favor the development of future large wood and other late-successional stand characteristics, as well as providing opportunities to restore degraded conditions that are the result of past activities in the watershed.

Beneficial uses that are dependent on the quality of the water in the McKenzie River in the project area include spawning and early rearing habitat for spring Chinook salmon, rearing and foraging habitat for sub-adult and adult bull trout (both listed as Threatened species and protected under the Endangered Species Act), and use as public drinking water for the City of Eugene at the Hayden Bridge intake downstream of the project area. Tributaries to the McKenzie River in the project area provide habitat for additional aquatic organisms, including cutthroat and rainbow trout, mountain whitefish, and brook lamprey, considered Management Indicator Species in evaluating project effects to animals and their habitat.

The effects of this project on water quality and aquatic and riparian habitat are evaluated by the following criteria:

Issue #1 Water Quality/Aquatics—Indicators
• **Indicator #1:** *Changes in available stream shade and potential to increase stream water temperatures.* **Measurement:** Projected increase in stream water temperature above current condition (Degrees Celsius) • **Indicator #2:** *Changes in risk of altered peak flows.* **Measurement:** Expressed by the Aggregate Recovery Percentage (ARP) • **Indicator#3:** *Estimated project effect on short-and-long term transport of sediment from project area roads.* **Measurement:** Cubic yards of sediment yield originating from roads during and after the project.

- **Indicator #4:** *The amount of riparian area receiving treatment, and the effects of the treatment on riparian stand composition.*
  Measurement: Acres and % of riparian thinned

Issue 2. Threatened Northern Spotted Owl

The northern spotted owl, a Threatened species in terms of the Endangered Species Act (ESA), has specific requirements under the ESA with regard to protection of habitat. Protection includes consultation or conferencing with the US Fish and Wildlife Service (USFWS) on activities that alter habitat or cause disturbance. Northern spotted owl habitat can be classified as **Suitable** (nesting, roosting, foraging) or **Dispersal** habitat. It is important to note that part of the Bridge Thin project area is located with a northern spotted owl Critical Habitat Unit (CHU). Management activities may change the quality or quantity of current and future northern spotted owl habitat.

The effects of the alternatives on threatened northern spotted owl are evaluated by the following criteria:

Issue #2 Northern Spotted Owl—Indicators
• **Indicator #1:** *The amount of suitable northern spotted owl habitat downgraded or removed from a Critical Habitat Unit.* **Measurement:** Acres of suitable northern spotted owl habitat downgraded or removed from a Critical Habitat Unit. • **Indicator #2:** *The amount of dispersal northern spotted owl habitat removed from a Critical Habitat Unit.* **Measurement:** Acres of dispersal northern spotted owl critical habitat removed from a Critical Habitat Unit.

Non-Significant Issues and Concerns

These *other issues* were addressed in project development. The issue statements below are followed by reasons why they were not considered significant to the development of alternatives and not always fully analyzed in the following chapters. However, they may serve as important tools that are used to qualitatively evaluate differences between alternatives.

Soil Productivity/Slope Stability

Soil compaction and displacement can occur during timber harvest and road construction activities, which could adversely affect the re-establishment of vegetation and the hydrologic capacity of the soils. Road construction and timber harvest can reduce slope stability on potentially unstable slopes.

Since the potential effects identified with this issue would be effectively mitigated by measures designed to comply with the Willamette Forest Plan, this issue was not considered significant for designing alternatives to meet the purpose and need for action. All action alternatives meet or exceed standards and guidelines for soil protection from the Willamette Forest Plan, through incorporation of Best Management Practices for the protection of soil resources.

Variable Density Thinning

Scoping comments were received that urge the use of variable density thinning in the managed stands for this proposal. Variable density thinning would begin development of late-seral stand characteristics over time.

This issue was not considered significant because silviculture prescriptions and marking guidelines include variations in average residual tree spacing of between 17 and 35 feet. The average spacing along with holes caused by natural disturbances like insects and diseases, and windthrow along with untreated reserves will result in a stand with variability in continuity and density, similar to the that suggested by the commenters (see Silvicultural Descriptions, Moderate Commercial Thinning). Commercial thinning prescriptions would result in much the same variation in stand density after treatment as suggested by the commenters. (see Silvicultural Descriptions, Moderate Commercial Thinning, page 69)

Sensitive or Other Terrestrial Species of Concern

Activities that remove or degrade forest habitats might affect a variety of wildlife and botanical species. Activities that create noise above ambient levels may also impact a variety of wildlife species.

This issue was not considered significant because all actions that remove or degrade forest habitat would be required to follow conservation and protection guidelines provided by the Willamette Forest Plan to avoid adverse affects on listed species. Activities that generate noise above ambient levels near nest sites of Sensitive or other wildlife species of concern would be seasonally restricted. Activities that generate noise above ambient levels near nest sites of Sensitive or other wildlife species of concern would be seasonally restricted. Design measures and mitigation measures address this issue in Chapter 2. The effects of the proposed action and the other alternatives on Sensitive and other wildlife species of concern are addressed in Chapter 3.

Migratory Land Birds

This project could affect Neotropical Migratory Birds and their habitat, which varies broadly for this large group of species. Required-protection for these species is outlined in the Migratory Bird Treaty Act.

This issue was not considered significant because the proposed silvicultural treatments promote understory shrub development, tree species diversity, deciduous trees, and the growth of larger trees. As a result, snags and downed logs are maintained and created, as well as the creation of gaps, which generally improve avian biodiversity in the stand. The effects of the proposed action and other alternatives on migratory land birds are addressed in Chapter 3.

Big Game Habitat

Big game Emphasis Areas (BGEAs) are those managed for Habitat Effectiveness under guidance from Willamette National Forest Plan. There are three Emphasis Areas within the Bridge Thin project area.

Proposed actions could alter big game habitat by changing the amounts of foraging, hiding and thermal cover habitat as well as open road densities.

This issue was not considered significant because project action alternatives meet applicable Standards and Guidelines from the Willamette Forest Plan for the management of Big game Emphasis Areas. The effects of the action alternatives on big game habitat are addressed in Chapter 3.

Management Indicator Species (MIS)

Proposed actions could affect Management Indicator Species located within the project area as listed and described in the Willamette Forest Plan. The Forest MIS species list includes the northern spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagle, peregrine falcon, sea-run spring Chinook salmon, river-dwelling bull trout, and resident fish species like rainbow trout, cutthroat trout, mountain whitefish, and brook lamprey. Through Region-wide coordination each Forest identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of MIS. Management recommendations to ensure the viability of Management Indicator Species were incorporated into all action alternatives analyzed in the 1990 Willamette Forest Plan FEIS.

This issue was not considered significant because action alternatives from this project meet applicable Standards and Guidelines from the Willamette Forest Plan, and are designed to protect these species. The effects of the proposed action and other alternatives on MIS are addressed in Chapter 3.

Fire and Fuels

Proposed actions may increase or reduce the severity of the effects from wildfires that could occur within the project area. Reducing biomass through thinning with mitigation of increased ground fuel loading, due to harvest activities, changes the fire spread characteristic of the stand to reduce fire spread rate and intensity of burning. Leaving activity created slash untreated would increase fire spread and intensity. Prescribed fire treatments intend to reduce activity fuels or naturally occurring fuels and could lessen the impact and severity of future wildfires in the project area by reducing the continuity of fuels across the landscape. The methods of fuel treatments, the time of year prescribed fire is applied, and the frequency of prescribed fire treatments can change and reduce the amount and the arrangement of fuel over the landscape. Air quality may also be affected during prescribed burning, given the close proximity of the Class I Airsheds (Mt. Washington and Three Sisters Wilderness) and the Designated Area of Willamette Valley (Leaburg).

The Bridge Thin Project Area is adjacent to private land along the McKenzie River, including the town of Blue River, the development of Rainbow, and several groups of homes and structures. These areas are located in the Wildland Urban Interface (WUI), and would also be a part of the Lane County Community Wildfire Protection Plan (CWPP). This CWPP was developed in 2005 by the Oregon Natural Hazards Resource Committee and adopted by Lane County. The implementation of this plan has not begun in all communities in Lane County. However many Bridge Thin treatments occur within the WUI, as identified in the Lane County CWPP, and are discussed.

This issue was not considered significant because design measures and accepted procedures for fuels treatments and air quality standards would follow the Willamette Forest Plan Standards and Guidelines (See Chapter 3 – Fire and Fuels analysis.)

Global Climate Change

Forests are considered sinks for carbon and studies suggest the potential for large wildfires to be detrimental to global climate (JFSP, 2007). The scale of analysis for climate change, however, is large and many potential causal factors are still being researched and evaluated. The reduction of hazardous fuels to help reduce the severity or size of wildfires – especially in and adjacent to WUI – would aid in safe fire suppression efforts when helping to protect forested areas. The reduction of hazardous fuels and the reintroduction of fire help reduce the severity or size of future wildfires which could aid in reducing the combustion of sequestered carbon in trees. An indirect effect may be reduced CO^2 emissions than would occur in a wildfire and as a result, more carbon would be retained on site. Because of the large scale aspects of climate change and the limited scope and scale of the proposed action, however, this issue is not considered significant in the context of the decision to be made.

Invasive Plants

Proposed actions may introduce or spread noxious and non-native invasive plants. Off road vehicle and equipment use, ground disturbance, and created openings in the forest canopy resulting from any action alternative, can provide an opportunity for noxious and non-native plants to establish and out-compete the desirable native vegetation.

Among the 16 documented Invasive Plants in the watershed, 8 are "new invaders" (weeds limited in distribution with the possibility of eradication based on knowledge of their location). Many of these weeds are capable of broad ecological tolerance, prolific growth, and abundant seed production. Spotted knapweed (*Centaurea maculosa*) and false brome (*Brachypodium sylvaticum*) spread primarily by vehicular traffic and have quickly become established along forest roads found in the project area. Other species such as English Ivy (*Hedra helix*) and field bindweed (*Convolvulus arvensis*) are more effective utilizing animal vectors and rhizomes (underground root stems) to aid in propagation.

This issue was not considered significant because prevention measures, such as washing of equipment, re-vegetation using local native species, and minimizing creation of open, disturbed areas adjacent to existing weeds would be used for all action alternatives. These measures would prevent population expansion and to minimize establishment of new invaders. (See Mitigation Measures and Design Measures detailed in Chapter 2.)

Roads and Access

Management decisions could increase or decrease the roaded condition of the landscape, potentially affecting slope stability, water quality, and recreational access. Many of the roads within the project area are below current maintenance standards and are not drivable. This project would provide opportunities to improve current conditions on the 34 miles of road needed for rock and timber haul.

Existing roads that pose potential adverse affects to riparian resources would require improvements to comply with existing Best Management Practices.

This issue was not considered significant because all action alternatives perform maintenance on roads where the need is identified. The affects of the proposed action and other alternatives on roads and access are discussed in Chapter 3.

Recreation

Timber harvest and associated activities within and adjacent to proposed harvest units could affect both dispersed and developed recreation activities. Mitigation measures listed in Chapter 2 would restrict loaded helicopter flights so they do not fly over specific areas during harvest to ensure public safety. The proposed action is designed to be consistent with all Willamette Forest Plan standards and guidelines. The fuels reduction treatment proposed for unit 100 may impact hikers on the King-Castle trail with noise and associated smoke from burning activities.

This issue was not considered significant because the number of affected recreasionist woud be small, the impacts would be short-term, and mitigation measures would provide for public safety. The proposed action is also designed to be consistent with Willamette Forest Plan standards and guidelines for recreation management. Effects of the proposed action and other alternatives on recreation are discussed in Chapter 3.

Scenic Quality

Proposed actions include timber harvest that may affect visual management allocations in the planning area by creating openings from timber harvest, affecting visual quality. The view shed of the project area contains management allocations (MA-5a, 9d, 11a, 11c, 11e and 11f). Refer to information chart in Chapter 1 for specific unit numbers within each Management Allocation.

Harvesting activities may be viewed from Highway 126 and the McKenzie River.

Fuels reduction activities within unit 100 may be viewed along the King-Castle Trail. Commercial thinning harvest may also alter form and texture, affecting visual quality. This issue was not considered significant because the proposed action is designed to be consistent with Willamette Forest Plan visual quality standards and guidelines. Effects of the proposed action and other alternative on scenic quality are discussed in Chapter 3.

Roadless and Unroaded Areas

Comments were received during scoping from Oregon Wild that expressed concerns about timber harvesting within “roadless areas” defined by Oregon Wild, and “uninventoried unroaded areas” defined by the Willamette Roads Analysis. The specific concern was that logging in these areas has the potential to disturb soil and water, destroy scenic integrity, eliminate reference landscapes, limit primitive recreation, introduce non-native weeds, and disturb cultural resources.

A portion of the Mt. Hagen Inventoried Roadless Area (IRA) occurs within the Project Area, but no proposed activities are planned within two miles of the IRA. The proposed action includes harvest units within uninventoried, unroaded areas. However, this issue was not considered significant because even though timber harvest is proposed in these areas, all actions would meet Forest Plan

Standards and Guidelines and would be consistent with agency policy of disclosing the effects of forest management in unroaded areas. Project analysis indicates that timber harvest and other actions would not result in adverse impact to any roadless values that currently exist. The affects of the proposed action and other alternatives on unroaded areas is presented in Chapter 3, Roadless and Unroaded Areas.

Social/Economics

Timber volume generated from the proposed harvest units vary with different silviculture prescriptions. Alternatives actions may have different effects on the local and regional economies regarding job creation for neighboring communities when one considers the volume per acre of timber products for this proposal, and potential fluctuations in selling values when timber sales are implemented (starting in fiscal year 2008).

This issue was not considered significant for designing alternatives to meet the purpose and need because all action alternatives provide similar positive economic benefits to the economy in providing jobs and contributing timber products to local markets. All action alternatives are economically viable. See Chapter 3 for a discussion of this issue.

Heritage Resources

The project area has some known cultural resource sites and contains high probability areas for additional, undiscovered sites. Timber harvest and other ground-disturbing actions could potentially affect heritage resources.

This issue was not considered significant because Federal laws and regulations require that cultural resources be protected either through avoidance or data recovery. Cultural resource surveys of the proposed project area have been completed. All surveyed and inventoried significant cultural resource sites in the Bridge Thin Project area would be buffered and excluded from resource management activities.

Carmen-Smith Hydroelectric Project

The Eugene Water and Electric Board (EWEB) operates transmission lines associated its Carmen-Smith Hydroelectric Project within this planning area. In 1958, EWEB applied for and was granted a 50-year license for the construction, operation, and maintenance of the project by the Federal Power Commission (FPC), with an effective date of December 1, 1958.

Since EWEB's Original License was issued for a period of 50 years, the utility is currently seeking a New License from the Federal Energy Regulatory Commission, or FERC, the successor to the FPC. The New License is scheduled to be issued on December 1, 2008. All parties to the re-licensing effort are currently participating in settlement negotiations regarding potential license terms and conditions. FERC is currently conducting an Environmental Analysis of the utility's proposal and would subsequently issue a New License with its Articles based on that analysis and the result of settlement negotiations.

At this time there are no proposals or decisions associated with this project which can be reliably or accurately analyzed in order to assess future effects that may contribute cumulative effects within

the context of this EA. Therefore, this issue was not considered significant to development of project alternatives. Ongoing regular maintenance activities would continue into the future for the hydropower project. Comments were received from EWEB managers as mentioned above. Responses can be found in Appendix H. The Smith-Carmen Hydroelectric project and facilities were considered in project development, as addressed in Chapter 2, Mitigation Measures and Design Measures.