

Grove Thinning Project Environmental Assessment (EA)
Objection Statements and Responses
Clackamas River Ranger District
Mt. Hood National Forest
August 2014

Objectors	Objection Number
American Forest Resource Council (AFRC)	14-06-06-0010-218(B)
Bark	14-06-06-0011-218(B)

Response to Comments

Overview and Suggest Remedies/Resolution: This objection issue is focused on how the District responded to the objector’s comments on the pre-decisional EA. Suggested remedy is for the District and Forest to “be open to the public’s input in land management decisions and to view Bark as an ally, not an obstacle to better management of the Forest.”

Objector Statement #1: Objector states that the Forest failed to substantively respond to Bark’s comments about the project. Bark at 2. Objector states that they requested “changing the project to address their concerns, as this is the only way to maintain meaningful involvement in the decision making process for our public lands.” Bark at 2 and 3. Objector believes that they sent their information into a void and were left with the impression that there is little to no interest in the public’s input into the project. Bark at 3. Objector believes that the tone of the response to comments was “dismissive at best” and that “no one single comment – from any commenter besides the one that fully agreed with the draft decision – got positive reception is telling, as is the very quick turn-around” from the preliminary assessment to the final EA. Bark at 3.

Response: I find that the Responsible Official adequately considered Bark’s comments and concerns about public engagement and modified the proposed action over time in consideration of those comments. In the event a recommendation was not used to modify the proposed action, sound rationale was used and displayed in the response to comments. EA at 64 and Appendix B.

The Code of Federal Regulation (CFR) at 36 CFR 218.25(b) addresses consideration of comments and states that “(1) The responsible official shall consider all written comments submitted in compliance with paragraph (a) of this Section; and (2) All written comments received by the responsible official shall be placed in the project file and shall become a matter of public record.”

During the scoping and the project development process the Forest worked with external interest groups and citizens, one of those being the Clackamas Stewardship Partners (CSP) beginning in 2011, of which, BARK is a member. EA at 56. A scoping letter was sent to the public requesting input on March 12, 2012. EA at 56. The CSP provided a letter of support for the project; however, Bark provided a letter of dissent and was not in support of many elements of the project. Objection Record, Bark Letter at 1. Bark provided comments recommending development of several alternatives. Objection Record, Bark Letter at 23. The alternatives proposed by Bark were considered, but eliminated from detailed study; each of these was discussed adequately in the EA at 64 to 75. The response to comments, Appendix B, addressed Bark’s comments and demonstrated that their comments were considered by the Responsible Official.

In my review of the Grove Thinning Project Record, I did not recognize any area where the Responsible Official was “dismissive” with the objector’s comments. Public input to the project was considered by the interdisciplinary team and Responsible Official, regardless of who or what group submitted them. DN at 1 to 10. For example, the Rocky Mountain Elk Foundation recommended additional acres of forage be created to maximize the amount of early seral vegetation, but the Responsible Official did not modify the proposed action to include this recommendation because the project already balanced the needs for forage with other project elements related to stand health and growth. Draft DN/FONSI at 8; Appendix B at 15. In addition, a review of the changes from the initial proposed action to the final EA shows that the Responsible Official considered and incorporated concerns raised by the public in the Grove Thinning Project. EA at 57-63.

The ‘turnaround’ from the preliminary EA to final EA was 70 days (02/28/2014 to 05/09/2014). It is unclear how or why this ‘turnaround’ time should be perceived as a detriment to considering the comments that were received by the public. The regulation requires consideration of comments for an EA, as stated above. A formal response is not required. However, for the Grove Project, the Responsible Official took the time and effort to fully document consideration of comments that were received on the preliminary EA in an appendix to the EA, which more than fully complies with the requirement that comments be “considered.” EA, Appendix B. After comments were received and considered, the Responsible Official drafted a decision, made minor corrections to the EA, and circulated the final EA and draft decision for objection, again complying with the regulation 36 CFR 218.7. Objection Record, Legal Notice of Objection.

Final Remedies/Resolution: Given that the Responsible Official complied with the regulatory requirement to consider comments, I find that no remedy or resolution is needed.

Range of Alternatives/Issues/Purpose and Need

Overview and Suggest Remedies/Resolution: This objection issue is focused on the alternatives that Bark suggested the District consider in the EA and for AFRC, how the project meets the stated purpose and need. Suggested remedy is to provide an analysis of all of the reasonable alternatives that Bark suggested before the decision is finalized. Suggested remedy from AFRC is to treat additional acres that are equivalent to approximately 50% of the early and mid-aged stands in the watershed.

Objector Statement #2: Objector states that the discussion of removing units to obviate the need for road construction, as the suggested, is not being substantively engaged. Bark at 5 and 6.

Response: I find that the Responsible Official analyzed and adequately considered removing units to reduce the need for road construction. As documented in the EA, the Responsible Official documented the possible alternative of removing units requiring new temporary road construction and why it was considered, but eliminated from further study. EA at 66-68. The Decision Notice also refers to this alternative as “Other Alternatives Considered.” Draft DN at 12.

The regulation at 36 CFR 220.7(b)(2)(i) directs an EA to include a proposed action and when there are no unresolved conflicts concerning alternative uses of available resources, the EA need only analyze the proposed action. The regulation at 36 CFR 220.7(b)(2)(ii) states that an EA may document consideration of a no action alternative through the effects analysis by contrasting the impacts of the proposed action and any alternative(s) with the current condition and expected future condition if the proposed action is

not implemented. The regulation at 36 CFR 218.25(b)(1) requires the Responsible Official to consider comments submitted on an EA.

Bark, as well as Oregon Wild, suggested creating an alternative that would remove units that require new road construction, rebuilding of actively decommissioned roads, or log haul over rebuilt/reused stream crossings. This alternative was not considered in detail because the Responsible Official determined that the suggested alternative would provide a similar level of water quality protection when compared to the proposed action. While the alternative would not result in a better level of water quality, it would not provide benefits described in the purpose and need, including increasing the health and growth of stands and providing forest products. EA at 5 and 66-68. The EA documents how the alternative referenced by the objector would not meet the purpose and need, as it would result in the loss of 224 acres which would be equal to approximately 2.5 million board feet of timber. In addition, the 224 acres of stands would also continue on a trajectory of declining health, lack horizontal and vertical diversity, and forage quality would continue to decline. EA 66-68.

Objector Statement #3: Objector states that the Council of Environmental Quality (CEQ) regulations require alternatives when there are unresolved conflicts and that the District did not provide a thorough analysis of all of the reasonable alternatives that they suggested. Bark at 17.

Response: I find that the Responsible Official adequately considered public comments and a reasonable range of alternatives.

The regulation at 36 CFR 220.7(b)(2)(i) directs an EA to include a proposed action and when there are no unresolved conflicts concerning alternative uses of available resources, the EA need only analyze the proposed action. The regulation at 36 CFR 220.7(b)(2)(ii) states that an EA may document consideration of a no action alternative through the effects analysis by contrasting the impacts of the proposed action and any alternative(s) with the current condition and expected future condition if the proposed action is not implemented. The regulation at 36 CFR 218.25(b)(1) requires the Responsible Official to consider comments submitted on an EA.

The EA states that while there were concerns that were raised during scoping, field trips and the 30 day comment period, they were not considered key issues that would warrant fully developing a new alternative. EA at 57. The EA discusses the concerns that were raised by the public which included the reopening of roads, the need for attention to decadence and its value, thinning in late successional reserves (LSR), concerns with Best Management Practices (BMPs) and monitoring, effects to biodiversity, the need for more road decommissioning, and the risk of the spreading of invasive species. EA at 57-62. The no action alternative was fully developed and documented in the EA at 63 and 64.

The EA lists nine alternatives that were considered, but eliminated from detailed study. EA at 65-74. The Responsible Official considered an alternative to re-assess the ability to adequately remove “existing” roads from the map in a way that “improves actual conditions” on the ground. It was not further developed because it was not within the scope of the project and is addressed by the no action alternative. EA at 65.

The second alternative eliminated was the alternative to add additional miles of decommissioning, and change closed and stormproofed roads to decommissioned with entrance management. The alternative was not fully developed because the closed and stormproofed roads may be needed for future thinning, decommissioning would result in a similar level of water quality, some of the roads are used by Portland

General Electric and a Travel Analysis Plan analyzing the road system is being conducted across the Forest. EA at 66. The third alternative to remove units that require new temporary road construction was discussed in the response to Objection Statement #2.

The fourth alternative eliminated from detailed study involved modifying the project so that no new skid trails, landings or temporary roads are constructed in high-risk earthflow areas. The alternative was not further developed because it was found that the effects of the skid trails, landings and temporary roads were minimal while the objective of maintaining long-term site productivity and earthflow stability would still be met. The alternative would also result in the loss of 74 acres and 800 thousand board feet of timber, which would not be consistent with the Purpose and Need of the project. EA at 69-70.

The EA describes the alternatives to remove helicopter units to save time and money, as well as avoiding thinning in LSRs, Riparian Reserves and earthflows to avoid impacts. The Responsible Official considered both alternatives but decided not to further develop either of them. Removing the helicopter units would result in the loss of 71 acres and approximately 800 thousand board feet of timber. Also, the Forest found that the project was financially viable and sufficient enough to cover the costs of road work and helicopter operations. The alternative to remove thinning units in the LSR, Riparian Reserves and earthflows was considered, but not further developed because it would result in a loss of 996 acres and the value of the project would be reduced. Additionally, the Regional Ecosystem Office found that the project meets standards and guidelines for the LSR and is consistent with the Aquatic Conservation Strategy. EA at 71-73

Bark also suggested the alternative that trees in the LSR be felled and left on site to accomplish thinning objectives instead of logging. The alternative was eliminated from further consideration because the impacts to late-successional species would be minimal with the proposed action, the alternative would not meet the purpose and need of improved health and growth with approximately 32 acres of stands experiencing insect mortality, and there is a lack of funding for this type of project. EA at 73 and 74.

The last alternative considered but eliminated was a suggestion from Oregon Wild to defer harvest in stands older than 50 years. The alternative was dropped because it would result in the loss of 800 acres and nine million board feet of timber, stands would continue to lack horizontal and vertical diversity, and forage quality would continue to decline.

In conclusion, the Responsible Official considered eleven alternatives, two in detail and nine eliminated from detailed study. This range of alternatives appropriately incorporated the suggested alternatives from the objector; thus, the Responsible Official followed law, regulation, and policy with regard to the range of alternatives considered.

Objector Statement #4: Objector states that project treats insufficient acres to increase the health and growth of stands within the project area. AFRC at 2. Objector states that only 4% of the planning area is being treated and that with the “high costs of NEPA and the importance of enhancing structural and species diversity, as well as improving the growth and vigor of these plantations for ecological and social benefits, additional acres need to be included for thinning for maximum cost/benefit returns.” AFRC at 2. Objector also notes that the project includes “significant emphasis on decommissioning roads which increases the feasibility of treating more acres during this entry” and that moving toward a more “landscape” approach requires treating more acres to move the landscape towards the desired condition. AFRC at 2.

Response: I find that the EA adequately assessed the amount and distribution of those acres that are currently available for commercial thinning within the planning area.

The regulation at 36 CFR 220.4(c)(5) states that the Responsible Official will make a decision that is within the range of alternatives analyzed in the EA.

Approximately 15,628 acres (36%) of the project area consists of early to mid seral managed plantations. EA at 8. I asked the District to summarize the seral stages found in the project area. The District stated that of the 44,000 acres in the planning area, 35.5% was early and mid-seral plantations (15,628 acres), 12.1% was mid-seral natural stands (5,332 acres) and 47.2% was late seral (20,763 acres); a small percentage (5.2% or 2,283 acres) was considered to be non-forested.

Given the purpose and need of increasing the health and growth of mid-aged stands and providing wood products, the District then looked at the mid-seral plantations (30-60 years old) to determine suitability for thinning. EA at 64. Of the early to mid-seral plantations (15,628 acres), about 1,343 had already been thinned; about 1,756 are proposed to be thinned with this project, and the remaining acres were found to have relative densities that were not “ready” to be thinned at this time, but may be ready within the next 10 to 50 years.

Based on this information and the age distribution of existing plantations within the planning area, the District proposed to thin stands that have relative densities where thinning would beneficially affect tree growth and health. EA at 9.

The planning area has 228 miles of system roads. EA at 2. The proposed action is to decommission 4.46 miles of road, which is approximately 1.96% of the road system. EA at 4. I find that decommissioning this amount of road does not reach the level of a ‘significant emphasis item’ as stated by the objector.

Final Remedies/Resolution: Given that the Responsible Official complied with the regulatory requirement to consider issues and alternatives, I find that no remedy or resolution is needed.

Baseline Information and Impacts from Roads

Overview and Suggest Remedies/Resolution: This objection issue is focused on concerns that Bark has about construction of 35 temporary road segments, of which 0.2 miles is new construction and 5.5 miles is reconstruction on existing alignments, many of which have never been actively restored, but may have some regrowth of vegetation. Suggested remedy is to consider alternatives that remove units that require rebuilding of actively decommissioned roads and/or remove units that require log haul over rebuilt/reused stream crossings. Additional remedies are to include in the environmental baseline: “1) the actual condition of the road alignments – including their approximate stage of recovery; 2) the impacts of rebuilding and using these roads; 3) the condition they will be in after use and (re)decommissioning compared to the condition they are currently in; and 4) the likelihood that decommissioning will not occur as planned, and how that factors in to the assessment of environmental impacts.”

Objector Statement #5: Objector states that the District failed to provide accurate baseline conditions and analysis of impacts resulting from construction/reconstruction of “temporary” roads because the EA describes “these past road alignments as “existing” roads, which does not accurately represent the

environmental baseline, and fails to provide the information needed to assess the environmental impacts from re-building and using these roads for heavy machinery and log haul.” Bark at 2, 4 and 5.

Response: I find that the EA adequately characterized baseline conditions and disclosed environmental impacts and is consistent with Forest Plan standards and guidelines and applicable federal regulations.

The regulation at 36 CFR 220.7 does not set forth a requirement for an affected environment section for an EA. The EA may document consideration of a no action alternative by contrasting the impacts of the proposed action with the current condition and expected future condition if the proposed action were not implemented. 36 CFR 220.7(b)(2)(ii). Thus, the baseline with regard to temporary roads is captured in the analysis of the no action alternative and in the EA, which characterizes each segment of temporary road proposed for use. EA at 31-33, 114, 215 and 216.

I have reviewed the Project Record and did not find any description of past road alignments as “existing roads” and find that the decommissioned road alignments and planned temporary roads have been accurately described. The EA states that “Some road alignments from previously decommissioned system roads are referred to as temporary roads if they are used again and rehabilitated after use.” EA at 31.

The Responsible Official met direction found in the National Core BMPs when utilizing existing road alignments. EA at 40. Reconstruction in existing road alignments was designed to minimize impacts to resources. EA at 58, 59, 67, 116, 145, 146, and 155. Reusing existing alignments that have been previously disturbed is considered to have less impact than constructing and decommissioning road prisms in new locations. EA at 116. The National Core BMPs recommend emphasizing the reuse of existing road alignments rather than the construction of new roads where appropriate. EA at 40. The environmental impact of reusing existing road alignments has been evaluated and found to be minimal. EA at 31 and 216.

In order to avoid any potentially undesirable impacts to aquatic resources, new temporary roads would be strategically located on gentle slopes and would not cross any streams. Two of the existing road alignments proposed for reconstruction have seep crossings; however, they are designed to minimize impacts to aquatic resources (s. 1.4.7.4). The proposed action would rehabilitate the temporary road alignments after project completion. Road work included in the proposed action includes only those road segments that do not pose an adverse impact on aquatic resources and are needed to efficiently achieve the vegetation, health and diversity objectives discussed in section 1.3. EA at 58. Project design criteria and associated BMPs for road rehabilitation and decommissioning would reduce the risk of sediment entering any stream course. The impacts to water quality caused by sedimentation due to road construction, reconstruction, maintenance, or road decommissioning, if any, would be short-term and undetectable at the watershed scale. EA at 118.

There would be some short-term localized increases in sediment delivery associated with temporary roads, culvert removal and other actions; however the level of sediment is very low compared to the natural background sediment level in the action area. The potential short-term sediment impacts associated with the temporary roads would also be spread out in time and space. EA at 147. All temporary roads are located on stable ground and their construction or reconstruction would have no perceptible effect on slope stability. EA at 156. After use, temporary roads are bermed at the entrance, water barred, decompacted and roughened as needed with the jaws of a loader or excavator, and debris

such as rootwads, slash, logs or boulders are placed on the surface where available to deter use. EA at 31.

Objector Statement #6: Objector states that “each of these roads is in some degree of recovery which will be lost through rebuilding, use for log hauling and (re)decommissioning. At no point does MHNF show that (re)decommissioning would improve road condition more than leaving them alone, or engaging in active decommissioning without rebuilding and reuse for logging. As Bark has raised in several previous comments, rebuilding a road currently in recovery retards the restoration efforts by many years. The Jazz EA noted that after the project, road “recovery would take approximately 30 years.”” Bark at 5. Objector further notes that the fact that the soil specialist suggested the same conditions for all roads also suggests an overbroad analysis of their recovery levels. Bark at 5.

Response: I find that the Responsible Official adequately displayed the resource impacts from temporary roads. In addition, the Responsible Official analyzed the no action alternative which fully assessed the existing road condition, i.e. analyzed the old alignments if they were left alone.

The regulation at 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity.

As stated in the EA, while the vegetation does provide some cover to mitigate erosion as discussed in section 3.6.5, it does not indicate the recovery of soil disturbance; the areas remain compacted and displaced top soil has not been replaced. Even where vegetation is growing on some old skid trails, landings or temporary roads, there has not been substantial recovery in terms of soil productivity. EA at 167. Compared to the proposed action, no action would not maintain or repair 85 miles of system roads including one stream crossing failure; it would not close and stormproof 11.61 miles of system roads; it would not decommission 4.64 miles of system roads; and it would not rehabilitate 1.82 miles of existing road alignments that were never actively decommissioned or rehabilitated including one culvert that was never removed. Therefore, the road-related effects including the routing of water and sediment to streams associated with these areas would continue, if no action was taken. EA at 106.

The rehabilitation of reconstructed temporary roads that were never actively decommissioned or rehabilitated before would result in improved drainage and permeability of compacted road surfaces. EA at 151. Some of them have small trees or brush growing on them while many do not. Even with vegetation growing on them, these road alignments are considered the best place to temporarily reestablish a road because it results in less total ground disturbance compared to building another road somewhere else to access the thinning stands. EA at 31. Table 2.4 shows a comparison of decommissioning effects between the No Action alternative and the Proposed Action - Purpose and Need Indicator: Road maintenance, repair and decommissioning (EA at 76); Issues and Concerns: Roads (EA at 77), Water Quality (EA at 78), Geologic Stability (EA at 78), and Soil Erosion (EA at 78).

Use of existing road alignments meets direction found in the National Core BMPs. EA at 40. Reconstruction within existing road alignments was designed to minimize impacts to resources. EA at 58, 59, 67, 116, 145, 146, and 155. Reusing existing alignments that have been previously disturbed is considered to have less impact than constructing and decommissioning road prisms in new, undisturbed locations. EA at 116. The National Core BMPs recommend emphasizing the reuse of existing road alignments rather than the construction of new roads where appropriate. EA at 40. The environmental impact of reusing existing road alignments has been evaluated and found to be minimal. EA at 31 and 216. The proposed action would decommission the temporary road alignments after completion. EA at

31, 58, 59, 64, 67, 116, 146, and 156. The impacts of temporary road use were discussed in the response to Objector Statement #5.

Objector Statement #7: Objector states that the District's response to their comments that the alignments are the best place to re-establish a road is not responsive to their initial concerns that "road construction is by far the greatest contributor of sediment to aquatic habitats of any management activity" and they advocate that the roads not be built or rebuilt at all. Bark at 5 and 6.

Response: I find that the Responsible Official considered the objector's comments, specifically those about the construction of roads and the potential to impacts to aquatic habitats within the EA at 107-151 and in the Biological Assessment (BA) at 84-91.

The regulation 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity. In addition, the regulation at 36 CFR 218.25(b) directs the Responsible Official to consider public comments. The Responsible Official showed consideration of the objector's comments in the EA at Appendix B and BA at 80 to 87. See response to Objector Statement #2 and #3 for a discussion of the alternatives considered that did not construct or reconstruct roads.

The EA analyzes the potential for sediment yield from the landscape and includes the natural background yield as well as yields from roads and road activities such as construction, maintenance, and decommissioning; these are all considered in the analysis for effects to aquatic resources. EA at 107-151; BA at 84. The connectivity between roads and aquatic resources are described and analyzed in the EA at 103-104. Background landscape sediment yields are described and reported in the EA at 112-114. Several road sediment yield models were compared and the WARSEM model was determined the most applicable to the road system and ecosystem under analysis. EA at 111-112. Using WARSEM, modeling of the existing and temporary roads was completed to demonstrate the relative changes and cumulative effects of sediments yield the first year after implementation. EA at 112-120. These results show a less than 0.1% increase in sediment yields from some subwatersheds and an overall reduction in sediment yields across the watershed. EA at 114-120. The rigor of modeling conducted and level of analysis devoted to sediment yields from roads is in itself an acknowledgement that roads play a role in potential sediment yields from the forest landscape. All changes in sediment yields are within 0.1% of background sediment yields. EA at 118. The increased sediment yield associated with roads in project area subwatersheds compared to background yields and natural variability show that sediment contributions are very minor and undetectable at the subwatershed scale. EA at 118. In particular, the Cot-Oak Grove Subwatershed will experience a reduction in sediment yield with implementation of the project. EA at 118.

Thus, the EA at 107-151 provided adequate analysis to demonstrate the context for relative changes and magnitudes of sediment yields as well as the potential environmental effects associated with these changes. The BA further elaborates this relative change in sediment yields to the effects of the project on aquatic habitat and aquatic species of concern. BA at 80 to 87.

Objector Statement #8: Objector states that the District's response to their comment indicates that "instead of decommissioning the roads and restoring hydrologic function, the Response indicates that they are to be put on a revolving door of use as needed" via entrance management (decompacting the first 1/8 of a mile) and that this "will not accomplish the same level of rehabilitation as that which exists on these roads." Bark at 6. Objector states that they have observed instances where rehabilitation of

temporary roads is not effective or does not happen and cites monitoring from the No Whiskey EA as an example. Bark at 7. Objector states that this is not an isolated incident and needs to be considered in the evaluation of environmental impacts because the District “cannot base its conclusions of impacts on the assumption that all BMPs will be implemented as intended when the evidence on the ground points to other conclusions.” Bark at 7.

Response: I find the Responsible Official adequately considered the effectiveness of best management practices (BMPs) and project design criteria (PDCs) in the project effects analysis and project record. I find the Responsible Official provided detailed descriptions of the procedures used to monitor and determine effectiveness of PDCs and BMP’s for all resources in the EA at 35-54, 55-56, and 130-131; LRMP Five-6 through Five-75; and by the 2012 National BMP Monitoring Program. The Responsible Official adequately considered the effects of decommissioning roads and the rehabilitation of temporary roads in the effects analysis throughout the EA.

The regulation 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity. The regulation at 40 CFR 1505.3 states that mitigation and other conditions established in the environmental assessment and committed to as part of the decision shall be implemented by the lead agency of other appropriate consenting agency.

The glossary of the Northwest Forest Plan (NWFP) Supplemental Final Environmental Impact Statement (FEIS) at Glossary-5, defines decommissioning as “To remove those elements of a road that reroute hillslope drainage and present slope stability hazards.” Road decommissioning activities result in the stabilization and restoration of unneeded roads to a more natural state. 36 CFR 212.1.

Road decommissioning includes reestablishing vegetation and, if necessary, initiating restoration of ecological processes interrupted or adversely impacted by the unneeded road. According to the Forest Service Manual (FSM) at 7734.1, decommissioning includes applying various treatments, including one or more of the following: a. Reestablishing former drainage patterns, stabilizing slopes, and restoring vegetation; b. Blocking the entrance to a road or installing water bars; c. Removing culverts, reestablishing drainages, removing unstable fills, pulling back road shoulders, and scattering slash on the roadbed; d. Completely eliminating the roadbed by restoring natural contours and slopes; and e. Other methods designed to meet the specific conditions associated with the unneeded road.

The regulation at 36 CFR 212.1(2) defines temporary roads as those “Roads authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be part of the forest transportation system and not necessary for long-term resource management.” The FSM 7703.22(2) states “Motor vehicle use off designated roads, trails, and areas may be authorized by a contract, easement, special use permit, or other written authorization issued under federal law or regulation (36 CFR 212.51(a)(8); FSM 7716.2). This option may be particularly desirable when motor vehicle use off the designated system is associated with a single event or other authorized uses, such as grazing, vegetation management, and hazardous fuels reduction.”

There are no policies, laws, or regulations regarding the reuse of existing alignments and there is no implied prohibition on the future uses of these existing alignments.

The application of BMPs is commonly recognized as the primary means of ensuring the Clean Water Act is met and the anticipated environmental effects as described in the EA are achieved. EA at 97-100. Through a Memorandum of Understanding between the Forest Service the State of Oregon Department of Environmental Quality, BMP effectiveness is recognized as the primary mechanism for achieving water quality standards. EA at 98; LRMP at Five-11.

Past monitoring on the Clackamas River Ranger District has shown that PDCs were implemented 85% of the time and were effective 94% of the time. EA at 100 and 131. The EA at 3 recognizes and considers this documented level of implementation and effectiveness of PDC's and BMP's in the effects analysis. Thus, the effectiveness of PDC's and BMP's are being considered with declared understanding in the analysis that implementation is not 100%. Consideration and acknowledgement of implementation and effectiveness of PDC's and BMP's as determined from monitoring (EA at 131) has been adequately addressed in the effects analysis.

Rehabilitation of temporary roads will be conducted on all temporary roads to ensure the maximum recovery of hydrological function upon completion of work and need for the road. EA at 31 and 92-128. Some system roads will receive differing levels of decommissioning dependent upon existing conditions. EA at 29-30. Analysis regarding reusing existing alignments found there to be minimal effects. EA at 31, 114-129, and 167-170. The reasoning for the placement of temporary roads on existing alignments is further discussed in the EA at 57-58 and 66-68.

While vegetation growth does show that some level of recovery is occurring, this does not indicate that the road has recovered or is on the desired trajectory for recovery. Existing alignments were found to have compaction that does not allow for infiltration nor do they have the characteristics of a recovered soil. EA at 167-170. The BA at 83-87 discusses the condition and work to be completed on the roads and how roads with aquatic connectivity are to be addressed. Otherwise, road segments with no connectivity to aquatic habitat are left with minor road treatments such as those with access management. BA at 83-87. The opportunity to access and decommission temporary roads, which includes decompaction is considered to be beneficial. EA at 57-59 and 107-128. Thus, while the same level of rehabilitation would not occur on all of the temporary roads, a greater level of rehabilitation may be achieved on other segments than if they were left under the no action alternative. Reuse of existing alignments is consistent with FSM 7703.22, the LRMP as described in the EA at 129 and at 142, and the Aquatic Conservation Strategy. EA at 143-152.

Project specific PDC's for decommissioning of temporary roads are described in the EA at 40, 46-49, and 52-53. Specific stipulations exist regarding the timing and conditions for use of temporary roads. EA at 35. An example of a specific stipulation is that the road will be used during summer months when precipitation is low and use is not likely to have the same impacts to hydrological functions as would potentially occur if the roads were to be used during winter. EA at 42-44.

Some of the roads to be used as temporary roads were never actively treated upon completion of their last use. This is an opportunity to address and decommission 1.82 miles of road that were never actively treated in the past as described in the EA at 31 and 32. Some system roads may be in a state of natural or passive recovery and the effects of treating these roads are discussed in the BA at 84-91.

Thus, the analysis adequately discusses the effects and benefits of utilizing the existing alignments of old roads to locate temporary roads in the EA at 3. Also, consideration and acknowledgement of implementation and effectiveness of PDC's and BMP's as determined from monitoring has been

adequately addressed in the effects analysis. EA at 97-100. The assertion that effects are greater than disclosed due to the lack of implementation is not correct because the PDC's and BMP's are being considered in the analysis with understanding that implementation and effectiveness of is not 100%, as supported by forest monitoring data.

Final Remedies/Resolution: The EA included analysis and discussion of the existing condition of the temporary roads, analysis of the effects of not reusing these old alignments (no action), analysis of effects of using the alignments and subsequently decommissioning them, and an analysis of the effectiveness and implementation of project design criteria.

During objection resolution, the District Ranger stated a willingness to eliminate the temporary road associated with Unit #100, which reduces temporary road construction by 20%, or 0.04 miles. I concur with this change that the District Ranger has offered to make and find that the effects of this change are within the range of impacts disclosed in the EA. Because of the District's willingness to eliminate this temporary road, no further remedies or resolution is proposed.

Best Management Practices/Impacts to Water Quality

Overview and Suggest Remedies/Resolution: This objection issue is focused on concerns that Bark has about implementation of Best Management Practices (BMPs) and Project Design Criteria (PDCs) and the impacts the project could have on water quality. Suggested remedy is to include data on increased sediment from road building and log haul in order to assess cumulative effects.

Objector Statement #9: Objector states that the District's suggestion that sediment increase from log haul on unpaved would be minor due to PDCs limiting when log haul can happen does not address or is supported by contrary scientific studies on the topic Bark at 9. Objector states that the District disclosed that the increased sediment yield from temporary road use is 7.6 tons/year, but that "there is still no data or modeling" supporting the District's assumption that PDCs would prevent log haul from "significantly adding sediment to the watershed." Bark at 10.

Response: I find that the Responsible Official adequately disclosed the indirect and direct effects of the proposed log haul on roads.

The regulation 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity.

The total number of miles of paved roads, unpaved roads, haul routes, distance to listed fish habitat (LFH), and stream crossing are identified in the EA at 26-32 and 216-217, and in the BA at 22, 25, and 88.

The statement that sediment production from roads due to log haul is minor is discussed in the sediments section of the EA at 114-128 and in the BA at 83-91. The EA discloses the annual sediment load from project roads for the first year after construction and documents how this small amount of sediment from haul is not expected to be measureable. EA at 114-128. This discussion in EA is further supported by the discussion in the BA at 83-91.

The BA at 88 and 89 states that the majority of stream crossings in proximity to listed fish habitat occur on paved roads and that hauling on paved roads does not generate sediment. BA at 89. There are no stream crossings over listed fish habitat on aggregate surface roads and there is one intermitted stream

crossing on a native surface road that is over 6,000 feet from listed fish habitat. The BA at 87-91 documents a detailed discussion regarding the potential and magnitude of sediment production from project roads. Studies presented and used for the basis of analysis by the BA focuses on connectivity of streams and roads along with the efficacy of PDCs, and BMPs to minimize potential sediment production and delivery from forest roads. BA at 89. Using these studies for context, spatial forest data was analyzed to show the position of roads on the landscape relative to streams with listed fish habitat. BA at 87-91. The analysis demonstrates potential for project road stream connectivity and potential for sediment delivery. BA at 88-91. Road stream connectivity is also addressed in the network extension discussion. EA at 103-104. The project analysis goes further to identify project road segments with the greatest risk of sediment delivery to streams and prescribes specific PDCs for these road segments to address this potential. BA at 91.

The BA at 90 includes an assessment of a 2003 monitoring study of 15 small, non-fish bearing tributaries that had unrestricted wet season haul, meaning that haul was allowed during wet and dry seasons. The study found that road-generated turbidity could not be separated out from background levels at a distance of 800 feet from the source of the turbidity. In addition, what sediment did reach the stream was undetectable once mixed into the larger downstream systems. BA at 90.

Professional judgment, applicable studies and data in the EA and BA address the objector's concern that the magnitude of sediment delivery from project roads would be "significantly adding sediment to watershed." BA at 87-91; EA at 114-128. In summary, applicable studies and spatial data were used to analyze the proposed road system and demonstrate the low potential for effects from log haul on sedimentation processes. Thus, the EA provides the Responsible Official with adequate information about the context and intensity of effects from log hauling.

Objector Statement #10: Objector states that the PDCs are not meant to reduce impacts to zero and that the District anticipates that they will be implemented 85% of the time and effective 94% of the time, when implemented, suggesting that PDCs and BMPs will not be followed up to 15% or more of the time. Bark at 10-12. Objector states that their investigation of the Forest Service's compliance with BMPs and PDCs (on the Dry timber sale and Bass timber sale) found that neither are sufficiently implemented by the timber contractors, nor monitored by the Forest Service and that the Forest has not offered any data to argue their findings. Bark at 10 and 11. Objector states that this leads to impacts that are greater than anticipated and that future determinations of significance cannot rely on BMPs or PDCs to mitigate impacts, because their field data and scientific studies show that projects are not being implemented as planned. Bark at 10-12.

Response: I find the Responsible Official adequately considered the effectiveness of BMPs and PDCs in the project effects analysis and project record. I find the Responsible Official provided detailed descriptions of the procedures used to monitor and determine effectiveness of PDCs and BMP's in the EA at 35-54, 55-56, and 131.

See response to Objector Statement #8 which addresses PDC and BMP implementation and effectiveness.

The plan for monitoring of this project is described EA at 55-56, 60-61, and 130-131. Development of project specific BMPs considered for implementation are derived from sources such as experience from resource personnel, and the Forest Service National Best Management Practices Program, Nonpoint Source Pollution Control for Water Quality Management on National Forest System Lands, Technical

Guide Volume 1 as stated in the EA at 60. Forests are also currently obligated to conduct annual monitoring of implementation and effectiveness as part of the National BMP Monitoring Program through well documented evaluation criteria. This project is included in this pool of potential projects to be audited for BMP compliance as noted in EA at 131.

Non-compliance with PDC and BMP implementation is addressed through the local Responsible Official and Sale Administrator. Past monitoring on the Clackamas River Ranger District has shown that PDCs were implemented 85% of the time and were effective 94% of the time EA at 100 and 131. The EA at 3 recognizes and considers this documented level of implementation and effectiveness of PDC's and BMP's in the effects analysis.

Final Remedies/Resolution: The EA and BA included a detailed assessment of roads and the potential for sediment to enter into streams and included an assessment of the implementation and effectiveness of PDCs and BMPs. As such, no further final remedies or resolution is needed.

Aquatic Conservation Strategy

Overview and Suggest Remedies/Resolution: This objection issue is focused on whether or not the project complies with the Aquatic Conservation Strategy (ACS) objectives. Suggested remedy is to remove the commercial logging components from riparian reserves, which means dropping 412 acres from the timber sale.

Objector Statement #11: Objector questions whether commercial logging is necessary to acquire the vegetation needed to meet ACS objectives, stating that thinning would decrease the amount of trees that would become coarse woody debris in riparian reserves and delay when residual trees could be recruited into streams. Bark at 14.

Response: I find that the Forest adequately analyzed, discussed and concluded that the project complies with the ACS objectives.

The ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. Northwest Forest Plan (NWFP) Record of Decision (ROD) at B-9. Any project completed on public lands covered by the Northwest Forest Plan needs to analyze how the project effects each of the nine ACS objectives, described on page B-11 of the ROD for the Northwest Forest Plan. The EA addresses each of the nine ACS objectives.

The purpose and need of the project is to enhance the productive capacity of mid-aged stands by thinning and to treat a sufficient number of stands to meet Forest Plan goals related to forest project outputs. EA at 5. The EA states that part of the purpose and need are the drivers for health, growth and diversity (both horizontal and vertical stand structure) within the planning area. EA at 5. Specific stands were identified through GIS analysis and site surveys by IDT members who found proposed treatment stands to be overstocked and lacking multiple canopy layers both within and outside of riparian reserves. EA at 9. Specific stand conditions, growth and productivity are further discussed in depth within the EA at 82 to 84. The EA goes on to discuss stand diversity and how the proposed actions focus to improve existing conditions. EA at 88.

As stated in the EA Fisheries section, "implementing the proposed action would provide high levels of small-sized wood and thinning in the upland portion of the riparian reserves would result in few trees

dying, and live trees would grow larger compared to the no action alternative. The stream protection buffers would continue to supply nearly the same level of small wood recruitment to streams. Recent research (Johnston 2011) has shown that 90% of LWD in western Oregon and Washington streams originated at ground distances between 33 and 66 feet from streams. Streams with wider buffers would have greater than 90% of the predicted level of recruitment and streams with 50-foot buffers would have approximately 85% of the predicted level of recruitment. The stands proposed for thinning are not the only sources of wood recruitment along stream reaches. There are mature forest stands along the affected stream reaches that also contribute wood to streams and the wood from these stands would be much larger than what is contributed from plantations. As trees respond to thinning there would be large sized trees that would become available for recruitment to tributary channels and riparian reserves (RIEC 2013).” EA at 136-137.

The purpose of thinning an overstocked stand is to reduce the density of trees so that the residual trees have more growing space, resulting in a stand with more canopy layers because sunlight reaches the forest floor and more diversity of species. Because the remaining trees have more growing space, they have the potential to achieve larger sizes sooner than if the stand was left unthinned. This basic forestry principle is documented in the EA which states that “The FVS model predicts that tree size would average 18.3 inches diameter with no action and 23 inches diameter in approximately 40 years after thinning (s. 3.1.3&4). “ EA at 136-137.

The EA goes on to state that “In the interim, smaller wood would be provided from the stream protection buffer. The thinned portion of the riparian reserve would have larger trees, but they tend to be healthy and not as likely to die and fall toward the stream. There is the potential to manually fall trees toward the stream if necessary to meet objectives for in-stream wood instead of waiting for trees to die and relying on chance that the dead tree would fall toward the stream. The proposed action includes felling plantation size trees in certain units to enhance streams in need of woody debris (s. 1.4.6.2).” EA at 136-137.

The EA goes on to state that “The probability of affecting in-stream wood abundance in listed fish habitat is low because of the protections provided by stream protection buffers and because riparian reserve acres treated amount to only 2% of the total riparian reserve acres contained within action area.” EA at 136-137. Thus in terms of context and intensity, the proposed action treats a very small portion of the riparian reserves in this landscape. This means that 98% of the riparian reserves would continue on their current trajectories, providing both small and large wood to riparian ecosystems over time.

The EA clearly states how the proposed action will affect large woody material in riparian reserves and provides a well justified summary and conclusion for the Responsible Official by stating that “Riparian thinning with the prescribed stream protection buffers would maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of large-diameter coarse woody debris sufficient to sustain physical complexity and stability.” EA at 138. The cumulative effects discussion in the EA and the Fisheries Biological Assessment found that “While there are likely some short-term cumulative effects related to wood recruitment and riparian vegetation, there would also be some cumulative benefits as riparian reserves are restored to late-successional conditions and as roads are decommissioned. The ongoing projects meet Forest Plan aquatic standards and guidelines and are consistent with the Aquatic Conservation Strategy.” EA at 139.

ACS objectives are fully addressed. Specifically, ACS objectives 1, 2, 5 and 8 could potentially be impacted by the proposed actions within riparian reserves. The District did a complete and thorough job of assessing potential effects to each of the ACS objectives and provided the Responsible Official with information needed to make well informed draft decision. EA at 143-152. The District provided a clear ACS summary within the EA concluding that “While some short-term impacts to aquatic resources have been disclosed, the impact would be minimal and in most cases undetectable at the sub-watershed scale. The project would lead to improved water quality and enhanced riparian and watershed conditions in the long term because of the following: Stream protection buffers would provide sufficient stream shade, a source of woody debris recruitment to streams and would minimize the potential for sediment transport to streams; Variable density thinning with skips and gaps would enhance structural diversity in riparian reserves; Thinning in riparian reserves would accelerate the development of late-successional conditions; Felling trees into streams and bucking logs that cross streams would lead to improved stream conditions as pools develop; The decommissioning and storm-proofing of system roads would lead to improved water quality; The rehabilitation of reconstructed temporary roads that were never actively decommissioned or rehabilitated before would improve drainage and permeability of compacted road surfaces; and System road repairs and maintenance would allow for safe use while ameliorating water quality issues.” EA at 151.

The EA states that “For these reasons, the objective of maintaining existing conditions or implementing actions that restore watershed and landscape-scale features in the long term would be met for this project. This project is consistent with the Aquatic Conservation Strategy Objectives.” EA at 151 and 152.

Lastly, the District provided a complete and logical analysis of snags and down wood and potential effects to wildlife and wildlife habitat from implementing the proposed action. EA at 190-198.

In the Draft DN, the Responsible Official recognized the resource trade-offs between dead and down coarse wood, fire and fuel loading, and the opportunity to remove some of those trees that will soon succumb to competition-induced mortality. Draft DN at 5. The Responsible Official agreed that dead and down trees are a valuable resource, but the proposed stands for treatment had most of the legacy trees, snags and decayed trees that existed prior to past regeneration harvest removed. EA at 5. The trade-off of selecting the No Action alternative would be that snags provided in the near-term would be tall, slender, mainly Douglas-fir poles that would not provide for cavity-nesting birds nor persist on the landscape for any measurable amount of time. Draft DN at 5-6. This condition would continue until stands started to move past stem exclusion structural stage to the stem re-initiation phase where residual trees could start to put on diameter growth.

Objector Statement #12: Objector states that the findings from a “recently published peer-reviewed study by two research scientists from the National Oceanic and Atmospheric Administration (NOAA)” that addressed the question of whether commercial thinning enhanced or retarded the attainment of riparian biodiversity (Pollack & Beechie, 2014)” directly counters the District’s “approach to riparian logging as a one-size-fits-all approach to meeting the goals” of the ACS. Objector provided the study to the District for this objection review and states that they “hope the Forest Service will listen with a more attentive ear and remove the Riparian Reserve logging units from the Grove timber sale.” Bark at 14 and 15.

Response: I find that the Responsible Official met the ACS objectives and displayed the effects to riparian reserves in the Grove Thinning EA.

The regulation at 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity. Forest Plan water standards and guidelines-FW-54 to FW-79 and FS-BLM-Instruction Memorandum No. OR-2007-060 (2007) mandates project consistency with the nine ACS objectives.

I have reviewed the research cited by the objector, Pollack & Beechie, 2014, and the authors do state that passive management (no treatment) might be the best option in some riparian areas; however, the authors also state that “light or medium restoration thins may be an option that provides some increase in diameter growth of live trees, while minimizing production losses of large diameter deadwood.” The paper looks at five different structural habitat requirements of species that utilize riparian forests for all or part of their life stages, including large down wood in streams, large down wood on the forest floor, large standing snags, large live trees and canopy gaps. The paper describes that while a particular structural habitat requirement may be beneficial to some species (such as abundant deadwood), other species require or prefer another habitat (such as large trees). In the discussion section of the paper, the authors state that “consideration of the structural attributes that different species utilize and the effect that different restoration treatments have on the abundance of these structural elements suggests that passive management may often be the treatment that will best enhance biological diversity in degraded riparian forests, but that in some cases thinning may be beneficial.” Although the objectors believe that this paper justifies taking no action, the authors of the paper fully recognized the importance of stand characteristics that can be developed by thinning, as described above. The authors even state that “since different species have a variety of needs in terms of the size and abundance of large live trees and large deadwood” they suggest “that from a restoration perspective, there is no one “ideal” management regime, but that a range of passive and active management options should be considered for the purposes of creating biologically diverse riparian ecosystems, commensurate with the structural attributes needed by the species of concern.” Pollack & Beechie, 2014. The authors offer the caveat that thinning should be limited to situations where the need for large live trees outweighs the need for species that utilize large deadwood.

Thus, I believe that the Responsible Official has shown that there are benefits that can be achieved with the prescribed variable density thinning. Given that riparian thinning is proposed to occur on only 2% of the riparian reserves located in the project area, which means 98% of the riparian areas will be passively managed as suggested by the research paper, I find that the Responsible Official has demonstrated that they considered the trade-offs associated with riparian thinning. EA at 137.

For this project, riparian reserve widths are 180 feet for non-fish-bearing streams and 360 feet for fish-bearing streams. In riparian reserves, the thinning outside the protection buffers would be designed to create conditions suitable for tree growth and to enhance diversity while providing sufficient quantities of large wood for future recruitment. The intention is to enhance riparian reserves by accelerating the development of mature and late-successional stand conditions and increase the diversity of species growing in riparian areas. EA at 23.

Minimum stream protection buffers range from 30 feet for intermittent streams to between 70 and 85 feet for perennial streams based on slope. The streams that have a connection to listed fish habitat were examined by the fisheries biologist and the minimum widths above were adjusted based on the proximity to listed fish habitat, and other factors such as stream gradient and orientation and the

cumulative quantity of other past management along these streams. Intermittent streams connected to listed fish habitat are buffered to 50 feet and perennial stream buffers range from 75 to 180 feet. EA at 36.

The EA demonstrates how the 412 acres of riparian thinning and the inclusion of protection buffers helps improve the distribution, diversity and complexity that would be typical of landscape features that developed under natural conditions. The EA documents that “Over time, as late-successional conditions are restored in riparian reserves, missing elements such as large woody debris complexity both at the stream and landscape scales would be restored.” EA at 144.

The EA states that “The project would accelerate the restoration of late-successional conditions and reduce fragmentation. Riparian prescriptions would restore stands by creating diversity and complexity in largely homogenous stands. Stream protection buffers provide in-stream woody debris recruitment. The proposed action would also fall trees directly into streams and buck logs that span over the top of streams to provide some immediate benefit. The proposed action provides a balance between the maintenance of existing habitat for aquatic and terrestrial riparian species, populations, and communities, primarily through protection buffers, with opportunities to develop landscape scale restoration as multiple stands move toward late-successional conditions thereby improving the distribution, diversity and complexity typical of landscape features that developed under natural conditions. Over time, as late-successional conditions are restored in riparian reserves, missing elements such as large woody debris complexity both at the stream and landscape scales would be restored.” EA at 144.

Overall, the EA fully documents that some short-term impacts to aquatic resources may occur, but that these impacts are expected to be minimal and predominantly undetectable at the subwatershed scale. EA at 151. The proposed thinning of only 2% of the riparian reserves located in the project area, combined with site specific buffers and prescriptions that are designed to enhance diversity demonstrate that the District did not approach riparian reserves with a “one-size-fits-all approach to meeting the goals” of the ACS, as asserted by the objector and that the limited thinning proposed in riparian reserves is not contrary to the findings associated with the 2014 study submitted by the objector.

Objector Statement #13a: Objector states that the project would retard attainment ACS objective #3 (physical integrity), ACS objective #4 (water quality), ACS objective #5 (sediment) and ACS objective #8 (species composition). Bark at 15.

Response: I find that the District documented how the project complies with the ACS, specifically ACS objectives #3, #4, #5, and #8.

The regulation at 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity. Forest Plan water standards and guidelines-FW-54 to FW-79 and FS-BLM-Instruction Memorandum No. OR-2007-060 (2007) mandates project consistency with the nine ACS objectives.

The EA fully addresses all 9 ACS objectives. ACS objective #3, physical integrity, requires maintenance and restoration of the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations. The EA documents that past management actions have affected the physical integrity of aquatic systems. EA at 146. The EA documents how road decommissioning and rehabilitation of old

road alignments would help restore seep and stream crossings to their original bank and bottom configurations and that the physical integrity of these features would be enhanced. EA at 146. Project design criteria, including riparian no-cut buffers, would also protect the physical integrity of aquatic systems. As such, this ACS objective would be maintained and in the long term, improved. EA at 146.

ACS objective #4, water quality, requires maintenance and restoration of water quality necessary to support healthy riparian, aquatic and wetland ecosystems. The EA documents how temperature and sediment were affected by past management. The project would maintain water quality by following PDCs which include buffers to maintain stream temperatures and seasonal restrictions for log haul to reduce sediment inputs. Connected actions including improving and rehabilitating old road alignments, decommissioning and stormproofing roads, and repairing a road by adding a culvert where a stream shifted its path. After these enhancements are made, water quality would improve. As such, this ACS objective would be maintained and in the long term, improved. EA at 147.

ACS objective #5, sediment regimes, requires maintenance and restoration of the sediment regime under which aquatic systems evolved. The EA documents how past management affected the sediment regime. EA at 147. Peak flows, which influence sediment input, storage and transport, were also examined; the area was found to be hydrologically recovered. Active rehabilitation of road alignments, decommissioning, and stormproofing would also reduce sediment inputs. Project design criteria limiting wet season haul, equipment restrictions, and erosion control would also reduce potential sediment inputs. As such, this ACS objective would be maintained and in the long term, improved. EA at 148.

ACS objective #8, species composition and structural diversity of plant communities, requires maintenance and restoration of species composition and structural diversity of plant communities in riparian areas and wetlands to provide for a variety of natural processes. EA at 150. The EA documents how past regeneration harvesting simplified and altered species composition and structure. Thinning specifically diversifies and restores native tree composition and encourages growth of understory species. As such, this ACS objective would be maintained and in the long term, improved. EA at 150.

Objector Statement #13b: Objector states that the project would reduce the number of available snags and large woody debris and simplify the forest structure in riparian reserves, and that the 2014 report by Pollack & Beechie concludes otherwise. Objector states that it is “illogical to conclude that a forest at the stem-exclusion phase, with significant natural die-off, will remain in “dense uniform stands.” The standing and fallen deadwood is the main driver of structural complexity. By removing the trees that would otherwise die naturally and remain on site, the Grove timber sale simplifies the forest structure. This is not what a recovering forest needs.” Bark at 16.

Response: I find that the Responsible Official displayed the project’s purpose and need and described how the treatments met this purpose and need. In addition, sufficient quantities of dead and down wood would occur with the proposed action, Forest Plan standards and guidelines would be met and the project would be consistent with the Aquatic Conservation Strategy. As stated in response to Objector Statement #12, the research cited by the objector states that “light or medium restoration thins may be an option that provides some increase in diameter growth of live trees, while minimizing production losses of large diameter deadwood”. I find that the Responsible Official has shown that this can be achieved with the prescribed variable density thinning, which will also increase the structural complexity and species diversity of the treated stands.

The regulation at 36 CFR 220.7(b)(3)(iii) directs the agency to describe the effects of the proposed action and any alternatives in terms of context and intensity. The NWFP standard and guideline TM-1(c) states that timber harvest in riparian reserves is prohibited except where the application of silvicultural practices for riparian reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics is needed to attain ACS objectives. NWFP at C-31-C-32. ACS objective #8 requires the maintenance and restoration of the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability. NWFP at B-11.

The riparian reserves located within these managed 30-60 year old plantations are overstocked with relatively uniform tree size and distribution. In addition, they have low to moderate amounts of small diameter coarse woody debris, lack understory development and have low levels of snags. These plantations are managed young stands; they are not considered to be late-successional and do not meet the needs of riparian dependent species. The plantations provide shade to streams, but they do not produce the size and quantity of coarse woody debris sufficient to sustain physical complexity and stability of the riparian reserves and associated streams. They do not have mature and late-successional stand conditions. EA at 135, 137 and 138.

The EA documents that “Thinning would be conducted to introduce structural diversity through variable-spaced thinning. Minor species, non-hazardous snags and down wood would be retained and skips and gaps would be created. The quantity and sizes of skips and gaps are varied based on land allocation and site-specific situations.” EA at 90. The EA documents that skips are small areas where no trees are cut in patches scattered through a thinned stand and they are designed to provide dense shade and a place to optimize quantities of snag development; in these areas, snags would be relatively small. EA at 12. The EA documents that “Skips may be placed where there are special features such as clumps of minor species, large snags, wet areas, or locations of rare or uncommon species.” EA at 18.

The EA also documents that “Recent studies have indicated that dense, closed-canopy second-growth stands without legacy trees can result in a period of low structural diversity that can last more than 100 years and can have profound effects on the capacity of the forest to develop biocomplexity in the future (Courtney 2004, appendix 5, p. 3-24).” EA at 89.

At the landscape scale, there is no shortage of small or medium sized snags. EA at 89. Snags would be retained in all units where safety permits. If snags must be cut for safety reasons they would be left on site. EA at 50. Old down logs currently on the forest floor would not be removed. Additional down woody debris would be generated by thinning and includes retention of cull logs, tree tops, broken logs and any snags that would be felled for safety reasons. EA at 51. Stand data that was collected for this project in combination with stand simulation modeling demonstrates sufficient quantities of dead and down wood would occur with the proposed action. EA at 59. The analysis shows that approximately two of the five to six existing snags may be lost in the thinning operation. The proposed action would create eight snags per acre by topping and girdling in the LSR and one per acre on other land allocations. These levels are sufficient to meet Forest Plan standards and guidelines. EA at 198.

As documented in the EA, “In Douglas-fir forests, standing and down dead wood is as important a component of ecosystem function as the live plants, soils or animals (Maser 1984). Plantations generally lack certain elements of diversity and complexity. They often do not contain the mix of tree species that

were present in the original stand and they are relatively uniform in terms of tree species, size and spacing. When the original clearcut harvesting occurred, all of the large trees and snags were removed. The plantations tend to display minimal variability of vertical and horizontal stand structure and little sunlight reaches the forest floor resulting in low levels of diversity of ground vegetation. Thinning would feature variable density with skips and gaps. Leave trees would include minor species, trees with the elements of wood decay and non-hazardous snags while some snags and down logs would be created. Some hazardous snags may be lost. The effects of thinning on the elements of stand diversity are generally felt only inside the thinned stands; therefore the analysis area for direct, indirect and cumulative effects for stand diversity would be the unit boundaries.” EA at 88 and 89.

The EA further documents the benefits of thinning in young, managed plantations stating that “The northern spotted owl recovery plan has the following recommendation for critical habitat: *“In moist forests managed for spotted owl habitat, land managers should implement silvicultural techniques in plantations, overstocked stands and modified younger stands to accelerate the development of structural complexity and biological diversity that will benefit spotted owl recovery”* (USDI 2011b p. 19). The Revised Critical Habitat for the Northern Spotted Owl recommends, on the basis of extensive scientific analysis, that areas identified as critical habitat should be subject to active management, including logging, in order to produce desired stand characteristics (USDI 2012).” EA at 176.

The purpose of this project is to enhance the productive capacity of mid-aged stands by thinning and to treat a sufficient number of stands to meet Forest Plan goals related to forest product outputs. The primary purpose in riparian reserves is to accelerate mature and late-successional conditions. EA at 17. While achieving these primary purposes and needs, there are additional outcomes that can be accomplished, such as diversity, forage, road work, and fuels work. I find that the Responsible Official has shown that proposed action meets the purpose and need of the project. The project would provide snags, trees with decadence and down logs (considering both quantity and size) at levels sufficient to meet the Forest Plan standards and guidelines and to provide for the species that depend on these structures both at the stand scale and the landscape scale. Draft DN at 6. Thinning will improve vertical and horizontal diversity by variable spacing and creating small skips and gaps. Other benefits include improving forage quantity and quality by creating areas of 3 to 5 acres in size totaling 32 acres that are more open than standard thinning; accomplishing needed road work on the roads used to access thinning, while decommissioning and stabilizing roads that are currently contributing sediment to the aquatic system; and creating a fuel break adjacent to the Ripplebrook and Timber Lake Administrative sites and residential areas. The proposed action has been designed to meet the goals and objectives of the Forest Plan as amended by the Northwest Forest Plan. I find that the PDCs incorporated into the proposed action are sufficient to meet water quality standards and protect the resources that depend on aquatic systems. Draft DN at 5-11.

In conclusion, I find that the Responsible Official displayed the Project’s purpose and need and described how the treatments met this need. In addition, sufficient quantities of dead and down wood would occur with the proposed action, Forest Plan standards and guidelines would be met, and the project would be consistent with the Aquatic Conservation Strategy.

Final Remedies/Resolution: The Responsible Official provided adequate documentation as to why the project proposes thinning in riparian reserves and documented compliance with the ACS. In addition, the current science submitted by the objectors does not contradict the limited thinning (2% of the project area’s riparian reserves) proposed with this project. As such, no remedy or resolution is needed.

Soils

Overview and Suggest Remedies/Resolution: This objection issue is focused on concerns that Bark has about the exemptions from the soil standards in earthflow terrain that are proposed for the Grove project. Suggested remedy is to modify the sale so that no new skid trails, landings, or temporary roads are constructed in high-risk earthflow terrain, which ensures that ground-based yarding could only occur if it takes place on pre-existing alignments and results in no additional compaction outside those alignments, or to drop the units and not “circumvent” existing standards and guidelines.

Objector Statement #14: The EA approves two exception to the Forest Plan’s soils protection standards (compactions percentage in earthflow and allowing ground based yarding in earthflow), but fails to amend the Forest Plan and consider the cumulative effects of doing this, thus failing to follow LRMP standards and uses the “exact same boilerplate language for the exceptions” on past sales, including the 2007 Thin EA, Jazz EA, Rethin EA and Collawash EA, which is “overbroad and clearly shows that the Forest Service is not making a thorough, site specific determination that this exemption is warranted.” Bark at 8 and 9.

Response: I find that the Responsible Official gave adequate consideration to exceptions of the LRMP soil protection standards regarding yarding and thinning on earthflow landforms for this project.

The LRMP at Four-45 describes the documentation process for approving exceptions to standards and guidelines that are premised with the action word “Should.” A project level exception does not require a Forest Plan amendment, as documented in the LRMP at Four-45. The EA at 173-175 documents the basis for these exceptions. The objectives to maintain long term site productivity will be met as the stands are thinned. EA at 162-175.

Geologic analysis of landform stability was evaluated by an experienced Geologist and fully analyzed in the EA at 152-161. Existing conditions are described for landslide earthflow landforms in the EA at 152-155. The EA at 152 summarizes the issue and specifically states that tree roots beneficially affect stability by lowering the groundwater table through evapo-transpiration and stabilizing the upper several feet of soils. “Previous regeneration harvest units that show no signs of shallow or deep-seated post-harvest slope instability are assumed to remain stable after thinning. Similarly, old roads that show no signs of shallow or deep-seated slope instability are assumed to remain stable after they are reused. Areas that have signs of instability are dropped from the project.” EA at 152. This was determined by a variety of methods including GIS, historical data and photos, field investigations by resource specialists and the slope stability specialist. EA at 152.

Regarding standard and guideline B8-036, the EA at 175 states that “An exception is proposed because examination of the units has found that the use of existing roads, skid trails and landings with post use decompaction would result in minimal impact. The objective of providing for earthflow stability would still be met.” Options considered including use of skyline and helicopter are discussed and in summary, the EA documents that “These options were adopted in some situations where appropriate but in most earthflow units, the objective of earthflow stability would still be met by thinning to create healthy, productive stands using ground based methods.” EA at 175.

Regarding standard and guideline B8-040, the EA at 175 states that “This standard and guideline suggests that cumulative detrimental soil condition should not exceed 8% on earthflows. Many units already exceed this level. Even though there was no standard for long term soil productivity or

earthflow stability when the original clearcuts were logged, the stands have grown well and are projected to continue to grow after the proposed thinning. The proposed action has been designed to minimize additional soil impact and to treat some impacted soils where appropriate. In areas not disturbed again, such as in skips and stream protection buffers, natural recovery would continue to occur as roots and burrowing animals penetrate and break up compacted soils, and as organic matter accumulates. The EA at 169 and 170 describes that site productivity has not been impaired and cumulative effects of the proposed action would not be substantial and trees and other vegetation are expected to continue growing and developing at appropriate rates. The objective of maintaining long term site productivity and earthflow stability would still be met.”

The exceptions would allow the District to meet and maintain the long-term site productivity objectives as the stands continue to grow well after the proposed thinning is implemented. EA at 172. Furthermore, approving the exceptions on earthflow terrain will meet Forest Plan objectives because thinning will result in healthy and vigorous stands with strong well-developed roots. EA at 82 and 83.

Cumulative effects are discussed for water resources in the EA at 120-128 and for soils in the EA at 160, 167, 169, 170 and 172. Past, present and foreseeable projects are discussed in table form in the EA at 122-124. The ARP model includes all land management activities that are modeled to demonstrate the potential adverse cumulative effects related to past, present and foreseeable actions relative to recovery of hydrological conditions through time. EA at 101-102. The database used for this model includes all surface management through time on and off the forest in subwatersheds.

For the two earthflow features associated with this project (Ripplebrook and Tag – EA at 159), the cumulative effects are specifically disclosed in the EA at 160 with regard to ARP. Here, the EA notes that the individual earthflow is the logical analysis area for cumulative effects because an action on stable ground outside of earthflow terrain isn't likely to affect the stability of an individual earthflow. EA at 160. Cumulative effects for soil disturbance is disclosed in the EA at 169-170. While Bark cited several projects in their objection, none of the units from the 2007 Plantation Thin EA (which Bark refers to as the 2007 Thin EA), Jazz EA, or Collawash Thin EA overlap in time or space with this project to possibly cause a cumulative effect to soils on earthflow terrain. The EA specifically addresses the potential for cumulative effects on earthflow terrain and specifies that only a few units associated with the Swag timber sale (which was a part of the Rethin EA) would overlap in time or space with the individual earthflows associated with this project.

Thus, I find that the Responsible Official adequately documented and described the reasoning behind the exceptions, and rationale for the exceptions was documented in the analysis provided in the EA at 173-175.

Final Remedies/Resolution: The Responsible Official adequately documented the rationale behind the exceptions to the standards and guidelines, which are allowed under the Mt. Hood National Forest LRMP. During the objection resolution meeting, Bark submitted a new list of requested changes that differs from those listed in their objection. Many of their changes are similar, but they did not reassert their concern over soils or suggest that the District not create any new skid trails in earthflow terrain. Regardless, because the impacts to earthflows were appropriately documented, I find that no remedies or resolution is needed.

Impacts to Wildlife

Overview and Suggest Remedies/Resolution: These objection issues are focused on the potential impacts to Northern spotted owl dispersal habitat from the proposed heavy thinning and impacts to elk and deer from the lack of creation of early seral habitat. Suggested remedy from Bark is to drop the 150 acres of heavy thinning in critical habitat that would remove dispersal habitat. Suggested remedy from AFRC is to treat additional acres with this project that would be equivalent to approximately 50% of the early and mid-aged stands in the watershed.

Objector Statement #15: Objector states that the project would reduce Northern spotted owl dispersal habitat canopy levels below 40% in the matrix land allocation units and that the effects would be long-term, not short-term, as claimed by the District and the US Fish and Wildlife Service (USFWS). Bark at 13. Objector states that there is a “serious trade-off in several aspects of thinning to promote spotted owl habitat” which includes the reduction in snags, down wood and productivity for Northern flying squirrels and that without data on spotted owl presence or nest sites, the District failed to take a “hard look” at the impacts to the owl. Bark at 12 and 13.

Response: I find that the Responsible Official sufficiently analyzed and disclosed the effects of the alternatives to the northern spotted owl. I also find that the Responsible Official sufficiently analyzed and disclosed the effects of the alternatives to snags and down wood.

The regulation at 36 CFR 220.7(b)(3)(iii) directs the agency to document the environmental effects of the proposed action and any action alternatives in terms of context and intensity. The Endangered Species Act (ESA) at 16 USC 1531 establishes policies and procedures for protecting species of wildlife that are endangered or threatened with extinction. Guidance within the Recovery Plan (2011) includes Recovery Criterion and Recovery Actions for the Northern spotted owl.

The lead federal agencies for implementing the ESA are the U.S. Fish and Wildlife Service (FWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The FWS stated in their Biological Opinion, that although the proposed actions will adversely affect spotted owl critical habitat, the projects are consistent with both the 2011 Recovery Plan and the NWFP, will provide long-term benefits to spotted owls, and will be spread out over multiple years and two subunits. “We believe the short-term impacts are limited in scope and will not preclude Critical Habitat (CH) from contributing to the survival and recovery of the species at the CH subunit, CH unit or CH range-wide scales.” Objection Record, Biological Opinion (BO) at 18. The 2011 Recovery Plan has the following recommendation for critical habitat: *“In moist forests managed for spotted owl habitat, land managers should implement silvicultural techniques in plantations, overstocked stands and modified younger stands to accelerate the development of structural complexity and biological diversity that will benefit spotted owl recovery”* (USDI 2011b p. 19). On the basis of extensive scientific analysis, the Revised Critical Habitat for the Northern Spotted Owl recommends that areas identified as critical habitat should be subject to active management, including thinning, in order to produce desired stand characteristics (USDI 2012). EA at 176.

The EA documents that dispersal habitat is typically over 40 years of age and has a canopy cover of 40 percent or greater with an average stand tree diameter of 11 inches or greater. The EA states that spotted owls use dispersal habitat to “move between blocks of suitable habitat and juveniles use it to disperse from natal territories. Dispersal habitat may have roosting and foraging components, enabling spotted owls to survive, but lack structure suitable for nesting.” EA at 177. The project will treat

dispersal habitat only, which does not provide suitable spotted owl nesting, roosting, or foraging opportunities. The EA documents that “Complex structure favorable to flying squirrels may be achieved sooner in younger stands where there is a shorter vertical distance between the ground and the bottom of the canopy. The primary function of dispersal habitat however is for temporary movement and roosting as birds move between locations and is not required to provide optimal foraging opportunities.” EA at 180. While the project reduces dispersal habitat below 40% canopy cover in the matrix land allocation units, the USFWS concurred that the thinning of dispersal habitat below 40% canopy cover would maintain sufficient dispersal habitat across the landscape to allow spotted owls to disperse. EA at 181.

The EA also documents that the proposed action would not affect the viability of species that depend on snags and down logs because sufficient levels would be provided at the local and landscape scales. EA at 90. Snags would be retained in all units where safety permits and if snags must be cut for safety reasons, they would be left on site. EA at 50. Additional project design criteria apply to old down logs that are currently on the forest floor; these features would not be removed while additional down woody debris would be generated by thinning. This would include the retention of cull logs, tree tops, broken logs and any snags that would be felled for safety reasons. EA at 51. The EA also documents that stand data collected for this project and stand simulation modeling demonstrates that sufficient quantities of dead and down wood would occur post-harvest. EA at 59.

In conclusion, I find the Responsible Official adequately displayed the Project’s effects to spotted owls, snag and down wood, and the northern flying squirrel, and as such, set forth the context and intensity of the effects of the proposed thinning that was needed to make an informed draft decision.

Objector Statement #16: Objector states the project creates insufficient habitat for elk and deer (32 acres out of a 44,000 acres planning area) and that the “limited scope of the Grove thinning project limits significant opportunity for creating early seral habitat” which is declining across the Forest. AFRC at 2 and 3.

Response: I find that the Responsible Official recognized the objector’s concern about elk and deer and appropriately addressed this concern within the EA.

The regulation at 36 CFR 220.7(b)(3)(iv) states that the agency should consider the direct, indirect, and cumulative effects of the proposed action and any alternatives in an EA. The regulation at 36 CFR 220.7(b)(1) states that an EA must briefly describe the need for action.

The EA notes that thinning prescriptions can be adjusted so that additional sunlight reaches the ground and increases the productivity of forage plant species. EA at 13. Gaps would be created on up to 5% of each unit to help create variability and diversity. EA at 20. Gaps, heavy thins and forage areas would allow light to penetrate beneath the canopy and provide space for natural recruitment of diverse plant communities. EA at 150. Follow up treatments may include planting palatable species. EA at 24 and 25.

The Responsible Official considered the concern regarding forage that was raised during the comment period and responded by stating that “We recognize that 32 acres of forage enhancement will not correct the declining levels of forage across the landscape (s. 1.3). The proposed acreage of forage enhancement was determined by stand visits where appropriate plant communities and use was identified. Forage enhancement areas would be 3 to 5 acres in size. See response to comments #59 and 61.” EA Appendix B at 16. In the draft decision, the Responsible Official notes that “While the project

addresses some of the need for forage, it does not attempt to provide all of the forage that deer and elk need.” EA at 4; Draft DN at 8. The Responsible Official further notes that “A number of respondents to the Preliminary Assessment asked that I consider creating more forage. The proposed acreage of forage enhancement was determined by stand visits where appropriate plant communities and use was identified. I recognize that 32 acres of forage enhancement is not likely to reverse the trend of declining forage across the landscape. I have considered balancing the needs for forage with the other project elements related to stand health and growth, and have not found any additional area to add to this project. I remain committed to considering forage enhancement as a part of each vegetation management project where appropriate.” Draft DN at 8.

The scope of the proposed action was considered during early planning efforts as data for all plantations in the watershed were examined and compared to desired conditions from the Forest Plan. The planning area encompasses approximately 44,000 acres, while thinning would occur on 1,756 acres within this larger area. The EA states that “After focusing on this landscape, all mid-aged stands were examined and compared to desired conditions from the Forest Plan. While the project area contains many thousands of acres of mid-aged stands of various ages, approximately 1,756 acres are currently in a condition where variable density thinning treatments are appropriate to move stands toward desired conditions (s. 1.3.1.3 to s. 1.3.1.6).” EA at 4. See also response to Objector Statement #4.

Final Remedies/Resolution: The analysis fully documented that the impacts to the Northern spotted owl are limited in context and intensity to dispersal habitat and that the prescribed thinning regime fully complies with the recommendations of the 2011 Recovery Plan for the Northern spotted owl. Concurrence and a Biological Opinion were received from the US Fish and Wildlife Service, the agency charged with implementing the Endangered Species Act. With regard to elk, the District fully analyzed the acres available for thinning and chose to apply the gaps for forage where consistent with other objectives.

During the objection resolution meeting, the District Ranger proposed a reduction of heavy thinning in Northern spotted owl critical habitat by 80% and stated that they would thin only 30 acres with the heavy thinning prescription instead of the 150 acres in critical habitat and use a regular thinning prescription on the remaining 120 acres of critical habitat. While the objector suggested removing 150 acres of heavy thinning in dispersal habitat, the change proposed by the District Ranger reflects a compromise to modify the thinning prescription on 120 acres so that dispersal habitat within critical habitat is better maintained. Because this change has been made voluntarily, no further remedy or resolution is needed.

Economics

Overview and Suggest Remedies/Resolution: These objection issues are focused the economic viability of the project. Suggested remedy from Bark is to provide an economic analysis for the project and to provide an economic analysis that justifies the elimination of the alternatives they proposed. Suggested remedy from AFRC is to include treating additional acres that are equivalent to approximately 50% of the early and mid-aged stands in the watershed.

Objector Statement #17: Objector states that the District’s response to Bark’s comment about the economic viability of the project failed “to provide any actual economic analysis of the proposed project including the costs for Forest Service staff to plan the project, the cost of road construction and

deconstruction, the cost of sale administration and post-logging monitoring, all compared to the value of the trees being sold.” Bark at 17.

Response: I find that the Responsible Official adequately analyzed the economic viability of the project.

There is no rule, regulation or policy that requires an economic analysis in either the Mt. Hood National Forest Land and Resource Management Plan or the Forest Service Handbook/Manual. The Forest Service Handbook states that “when social or economic impacts are important to a reasoned decision, follow the direction in FSM 1970 and FSH 1909.17. Also consider unquantifiable environment amenities and values. Consider expressing the effects in terms of changes that would occur...” Further, the FSH 1909.15, 23.32 states that “For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.” The NEPA Handbook also states that, “A team integrates its collective knowledge of the physical, biological, economic, and social sciences and the environmental design arts into the analysis process.” FSH 1909.15 at 22. The Interdisciplinary Team used their collective knowledge as well as past experience with similar thinning projects to come to the determination that there is likely to be sufficient value of timber removed on this project. EA at 232. For the Grove project, the Responsible Official documented the consideration of economics in terms of the qualitative benefits the project would achieve.

The EA documents that estimated cost of system road repairs and road maintenance and breaks these costs out by road. EA at 26-29. The EA considers money passing through society by documenting the annual incremental contribution of each million board feet of timber at approximately 8.3 jobs. EA at 232. Bark is requesting the cost for Forest Service staff to plan the project; however, these types of costs are typically not considered in an economic analysis. As stated by the Office of Management and Budget, “planning costs are not included in the benefit/cost analysis since they are considered sunk costs (OMB A-94).”

In conclusion, an economic analysis is not required in an Environmental Assessment; regardless, the Responsible Official used the expertise of the District personnel in considering qualitative benefits of thinning the proposed units and considered the cost effectiveness through all stages of the project. Therefore, the Responsible Official followed law, regulation and policy. See also response to Objector Statement #18.

Objector Statement #18: Objector states that the District eliminated from detailed study several changes to the project that could be implemented singly or in tandem and that they were told that these alternatives were “not economically viable” but that no economic analysis was provided to them to justify this answer. Bark at 17. These included alternatives that: add additional miles of road decommissioning; remove units requiring new construction or rebuilding of actively decommissioned roads or log haul over rebuilt/reused crossings; remove units that require new construction of new skid trails, landings, or temporary roads in high-risk earthflow terrain; and remove 150 acres of heavy thinning in existing Northern spotted owl habitat. Bark at 17.

Response: I find that the Responsible Official adequately considered public comments and a reasonable range of alternatives. The suggested alternatives are referenced in the EA and the Responsible Official considered the alternatives and documented why they were dismissed in the Draft DN.

The regulation at 36 CFR 220.7(b)(2)(i) directs an EA to include a proposed action and when there are no unresolved conflicts concerning alternative uses of available resources, the EA need only analyze the proposed action. There is no rule, regulation or policy that requires an economic analysis in either the Mt. Hood National Forest Land and Resource Management Plan or the Forest Service Handbook or Manual. The Forest Service Handbook states that “when social or economic impacts are important to a reasoned decision, follow the direction in FSM 1970 and FSH 1909.17. Also consider unquantifiable environment amenities and values. Consider expressing the effects in terms of changes that would occur...” Further, the FSH 1909.15, 23.32 states that “For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.” For the Grove project, the Responsible Official documented the consideration of economics in terms of the qualitative benefits the project would achieve.

Bark suggested numerous iterations of alternatives, but without details that would allow the agency to perform an economic analysis. The alternatives suggested during scoping varied from those submitted during the 30-day comment period, which differ from those suggested in the objection and from the suggestions at the objection resolution meeting. While Bark suggested that these many alternatives all be considered separately with an economic analysis for each, they also requested at the objection resolution meeting that the District take all six actions they listed to remove units and roads. Because the requests have varied and changed, I do not believe it is feasible to perform a meaningful economic analysis. The professional judgment of my staff is that Bark’s proposals, when considered in their entirety, would not achieve the purpose and need and there would be insufficient funding in the remaining thinning to pay for needed road repairs, road decommissioning and closure, and the other important elements of the proposed action.

In conclusion, for each alternative not considered in detailed study, other reasons (rather than economics) were used to make the decision to eliminate them from detailed study, including qualitative benefits such as improved stand health and diversity. The Responsible Official followed law, regulation, and policy with regard to the level of economic analysis documented in the EA.

Objector Statement #19: Objector states helicopter logging is not economically viable and efficient, because it is “extremely expensive under the best of conditions and certainly not feasible for plantation thinning due to the size of material on the Grove project.” AFRC at 3. Objector concludes that an economically unfeasible project would not meet the purpose and need described in the draft decision. AFRC at 3.

Response: I find the Responsible Official adequately considered alternatives to helicopter logging and displayed the economic impacts from the project.

There is no rule, regulation or policy that requires an economic analysis in either the Mt. Hood National Forest Land and Resource Management Plan or the Forest Service Handbook/Manual. The Forest Service Handbook states that “when social or economic impacts are important to a reasoned decision, follow the direction in FSM 1970 and FSH 1909.17. Also consider unquantifiable environment amenities and values. Consider expressing the effects in terms of changes that would occur...” Further, the FSH 1909.15, 23.32 states that “For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.” For the Grove project, the

Responsible Official documented the consideration of economics in terms of the qualitative benefits the project would achieve.

The purpose and need of the project is to enhance the productive capacity of mid-aged stands by thinning and to treat a sufficient number of stands to meet Forest Plan goals related to forest product outputs. EA at 5. In support of the proposed action, use of a helicopter to yard forest products from difficult or environmentally sensitive areas is a common practice within the Pacific Northwest. I believe the Responsible Official balanced environmental effects with economics in choosing to use a limited amount of helicopter yarding in completing this project.

The EA recognizes the limiting factors of using helicopters and explains that packaging this type of yarding with other less costly yarding systems has proved successful on the Forest in the past. EA at 10-11. The EA explains in detail the number of acres of proposed helicopter logging and how and why the District proposed such actions. EA at 71 and Appendix B, comment 76. In conversation with the Forest, I found they sold Bass, Drum and Sax timber sales recently that are similar in nature with regard to the amount of helicopter yarding. Other design features that drastically effect viability of timber sales that have helicopter yarding include such things as fuel costs, haul distances, seasonal restrictions, landing size and configuration and average piece size of logged material. The economic analysis in the EA did briefly mention that, "...helicopter logging which is very expensive. The economic viability of helicopter logging is marginal given the value of the timber and the high cost of jet fuel. A recent similar helicopter offering received a minimal bid." EA at 231-232.

Final Remedies/Resolution: The Responsible Official considered both the qualitative and quantitative values associated with logging. Rationale was provided for eliminating alternatives from detailed study. Neither the Mt. Hood National Forest Land and Resource Management Plan, nor Forest Service policy requires consideration of economics in terms of monetary values. As such, I find that no remedy or resolution is needed.