

Chapter 2: Comparison of Alternatives

2.1 Introduction

“Alternatives” are management options that are being considered for implementation in the Border Project. Alternatives provide an objective framework for analyzing and comparing the effects of proposed management activities. The alternatives were developed after careful consideration of the direction provided in the Forest Plan, the purpose and need for the Border Project, and the Project’s significant issue. The significant issue was derived from public comments and is described in Section 1.10 of this EIS.

This chapter describes in detail one “no-action” alternative (Alternative 1) and two “action” alternatives (Alternatives 2 and 3). Alternatives 2 and 3 were designed to meet the purpose and need statements in Chapter 1. Each of these action alternatives proposes different activities, or different magnitudes of similar activities, to be implemented within the Border Project area. Alternative 2 is the Modified Proposed Action and Alternative 3 addresses the significant issue.

Inclusion of the no-action alternative in this analysis is required by the National Environmental Policy Act (NEPA). The no-action alternative proposes that no new management activities be implemented, and provides a baseline for an analysis and a comparison with the action alternatives which is detailed in Chapter 3.

In addition to describing these three alternatives, Chapter 2 includes a description of:

- The alternative development process
- Alternatives considered and not carried forward for detailed study
- A summary of the activities proposed by each alternative
- A summary of the effects that would result from the implementation of each alternative

2.2 Development of a Range of Alternatives

The implementation guidelines (40 CFR 1500) developed by the Council on Environmental Quality require that an environmental review must “...rigorously explore and objectively evaluate all reasonable alternatives.” The courts have established that this direction does not mean that every conceivable alternative must be considered, but that selection and discussion of alternatives must permit a reasoned choice and foster informed public participation and decision-making.

After reviewing the Forest Plan and the current condition of the Project area, the interdisciplinary team developed the Border Project purpose and need and Proposed Action. The Proposed Action outlined the management activities the interdisciplinary team had determined would move the Border Project area towards selected desired future conditions set forth in the Forest Plan. The Proposed Action was summarized in the federal register (Notice of Intent to prepare an EIS: January 28, 2008) and described in more detail in the January 2008 Scoping Letter. The NOI and Scoping Letter informed the public of the Border Project and invited their comments. The interdisciplinary team modified the Proposed Action after further evaluation, keeping the intent of the original

Proposed Action intact (Section 1.5). The Modified Proposed Action is analyzed in this EIS as Alternative 2.

The interdisciplinary team analyzed the public comments and identified a significant issue (Section 1.10). This significant issue was used to develop Alternative 3 that addressed resource and social considerations near areas of concern to the public.

During alternative development, the interdisciplinary team identified operational standards and guidelines that apply to all action alternatives and treatment units. Operational standards and guidelines include Forest Service policies, Forest Plan Standards and Guidelines, Minnesota Forest Resource Council Forest Management Guidelines, federal laws, and agency regulations. The operational standards and guidelines are designed to limit or avoid potential adverse effects and are automatically taken into consideration during the analysis of alternatives. Operational standards and guidelines are listed in Appendix B. If avoidable adverse effects were identified during alternative development or analysis, site-specific implementation direction was developed to ensure resource protection. These measures are listed by forest stand in Appendix C. Direction in Appendices A, B, and C are sometimes referred to as design features and mitigations measures in other sections of this EIS.

The Border Project EIS includes analysis of the effects of three alternatives in detail. In addition, the EIS briefly describes nine alternatives along with rationale for not analyzing the alternatives in detail. These alternatives provide an adequate range of alternatives to disclose the effects of potential actions and provide information on the trade-offs among resources.

2.3 Alternatives Considered in Detail

Data in Tables 2.1, 2.2, and 2.3 display the differences among the three alternatives. Map 2 and Map 3 show the specific forest stands and other activities proposed in Alternative 2 and Alternative 3 respectively. Appendices A and C include definitions of treatment types and show the primary proposed treatments.

Alternative 1, No Action

The No Action Alternative provides a baseline for comparison of the action alternatives. In this alternative, the Modified Proposed Action would not take place and there would be no new proposed vegetation management actions at this time. Existing management actions such as previously approved timber sales or road projects would be allowed to continue. Forest succession processes would transpire naturally. Existing road uses and recreational activities would also continue. Selection of this alternative would not preclude future management actions in the Project area.

Alternative 2, Modified Proposed Action

The Proposed Action was developed to achieve the purpose and need for action in the Border Project area. The Modified Proposed Action, which has become Alternative 2, has the same intent as the original Proposed Action described in the Scoping Package. Additional information about the original Proposed Action is located in Section 1.5 and Section 2.4 of this EIS. The Modified Proposed Action would implement the Forest Plan; including moving the vegetation conditions towards the desired landscape ecosystem objectives for age class, species composition and management indicator habitats. Vegetation treatment information can be found in Chapter 1, Section 1.5.1 and

Appendix A. Information for Alternative 2 proposals for gates, gravel pits, Johnson Lake parking/portage, special uses, easements, and stream crossings can be found in Chapter 1, Section 1.5.2. See Map 2 for locations of activities included in Alternative 2.

Alternative 3

Alternative 3 was developed to address the significant issue described in Section 1.10. The Responsible Official directed the interdisciplinary team to develop an alternative that would not include harvest or road construction near areas of concern to the public such as the BWCAW, VNP, and the Vermilion River. Therefore, treatment units in these areas were not included in this alternative. Information about the kinds of vegetation treatments can be found in Chapter 1, Section 1.5.1 and Appendix A. Actions proposed for gates, gravel pits, Johnson Lake parking/portage, special uses, easements, and stream crossings are the same as for Alternative 2. See Map 3 for locations of activities included in Alternative 3.

| Table 2.1 Comparison of Vegetation Management (Acres) | | | |
|---|---------------|---------------|---------------|
| Primary Vegetation Management Category | Alt. 1 | Alt. 2 | Alt. 3 |
| Create young upland and lowland forest through vegetation management treatments such as clearcut with reserves and shelterwood harvests. | 0 | 8,236 | 7,374 |
| Improve the quality of stand conditions through vegetation management treatments such as thinning and group selection harvests. These treatments would increase structural and species diversity and would not change the age of the stand. | 0 | 2,815 | 2,637 |
| Improve the quality of stand conditions through a variety of treatments including prescribed burning, biomass removal, mechanical ground disturbance, planting and/or seeding desired species, and removing less desirable species. | 0 | 2,082 | 1,942 |
| Total acres of vegetation management | 0 | 13,133 | 11,953 |

| Table 2.2 Vegetation Purpose and Need Activities/Results by Alternative | | | |
|---|-------------------------------|---------------|---------------|
| Purpose and Need | Activities and Results | | |
| | Alt. 1 | Alt. 2 | Alt. 3 |
| Landscape Ecosystem Objectives | | | |
| <i>Dry mesic Red and White Pine Landscape Ecosystem</i> | | | |
| Decrease the amount of aspen (acres) | 0 | 1,856 | 1,656 |
| Increase the amount of spruce-fir (acres) | 0 | 1,037 | 812 |
| Increase the amount of red pine and white pine (acres) | 0 | 1,171 | 1,039 |
| Increase the amount of 0-9 age class (acres) | 0 | 7,239 | 6,383 |
| <i>Jack Pine-Black Spruce Landscape Ecosystem</i> | | | |
| Decrease the amount of aspen (acres) | 0 | 278 | 278 |
| Increase the amount of jack pine (acres) | 0 | 121 | 121 |
| Increase the amount of 0-9 age class (acres) | 0 | 838 | 838 |
| <i>Lowland Conifer</i> | | | |
| Increase the amount of 0-9 age class (acres) | 0 | 63 | 57 |
| Vegetation Spatial Patterns (projected in 2014) | | | |
| Upland mature forest patches \geq 300 acres (existing 18) | 15 | 11 | 11 |
| Average size (acres) of upland young patches (existing 25) | 20 | 51 | 50 |
| Lowland brush habitat improvement (acres) | 0 | 125 | 0 |
| Oak enhancement (acres) | 0 | 332 | 332 |
| Scenery Enhancement | | | |
| Manage scenic areas for long-lived species (acres) | 0 | 503 | 503 |
| Fuels Reduction | | | |
| Treat fuels to reduce risk of unwanted wildfire (acres) | 0 | 701 | 451 |
| Aquatic Habitat Enhancement | | | |
| Enhance riparian habitat adjacent to streams, lakes (acres) | 0 | 671 | 671 |
| Forest Products | | | |
| Estimated volume in million board feet (mmbf) (board foot: the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide) | 0 | 54 | 49 |

| Table 2.3 Transportation System Purpose and Need Results by Alternative | | | |
|--|----------------|---------------|---------------|
| Purpose and Need | Results | | |
| | Alt. 1 | Alt. 2 | Alt. 3 |
| New system OML 1 winter roads (miles) | 0 | 1.6 | 1.6 |
| New system OML 1 all-season roads (includes the 0.1 miles of the unclassified existing road) (miles) | 0 | 0.6 | 0.6 |
| Road to be decommissioned (mostly winter roads) (miles) | 0 | 9.7 | 9.7 |
| Temporary road estimate (miles) | 0 | 44 | 38 |
| Special use authorizations: 11 permits, 12 roads (miles) | 0 | 1.9 | 1.9 |
| Existing gravel pits to maintain (3 potential expansions) | 12 | 11 | 11 |
| Potential gravel pit | 0 | 1 | 1 |
| Gravel pit to rehabilitate | 0 | 1 | 1 |
| Parking Area/portage improvement projects | 0 | 1 | 1 |
| Stream crossing improvements | 0 | 5 | 5 |
| Relocate gates (issue special use permit on gated road) | 0 | 2 | 2 |

2.4 Alternatives Considered and Not Carried Forward for Detailed Analysis

The NEPA implementation guidelines (40 CFR 1500) developed by the Council on Environmental Quality (CEQ) require that an environmental review must “...rigorously explore and objectively evaluate all reasonable alternatives”. The courts have established that this direction does not mean that every conceivable alternative must be considered, but that selection and discussion of alternatives must permit a reasoned choice and foster informed public participation and decision-making. Federal agencies are also required to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14).

Some of the comments submitted by the public regarding the Proposed Action included suggestions for alternatives. Some of the public’s suggested alternatives were already part of, or incorporated into, the design of the alternatives. Some of the comments resulted in the identification of portions of the significant issue and as a result helped develop the action alternative which is considered in detail in Chapter 3 of this EIS. Other comments were considered outside the Project’s purpose and need, or would not comply with Forest Plan direction or applicable environmental regulations. The IDT considered the Alternatives A through I and eliminated them from detailed study for one or one or more of the following reasons:

1. Did not meet the Project’s purpose and need or scope of the Proposed Action
2. Did not follow Forest Plan direction
3. Did not comply with applicable environmental law, regulations, or policy
4. Duplication within the alternatives to be analyzed in detail

Alternative A: Scoping Report Proposed Action

The Responsible Official distributed a Scoping Package on January 24, 2008 to inform the public of the Border Project. The Scoping Package included a “Proposed Action” which outlined the management activities the interdisciplinary team had determined would move the Project area towards desired future conditions described in the Forest Plan. Tables 2.4, 2.5, and 2.6 show information from the Scoping Package.

| Table 2.4 Proposed Action: Vegetation Management Primary Treatments | |
|--|---------------|
| Proposed Action Primary Treatment Category | Acres |
| Creating young stands with harvests <i>(Treatments such as clearcut with reserves)</i> | 8,617 |
| Improving stand conditions with harvests <i>(Treatments such as thinning)</i> | 3,730 |
| Restoring stand conditions without harvests <i>(Treatments such as diversity planting)</i> | 1,904 |
| Total Acres Treated | 14,251 |

| Proposed Action | Outcome |
|---|----------------|
| New system OML 1 winter roads | 1.1 Miles |
| New system OML 1 all-season roads | 0.5 Miles |
| Road to be decommissioned (predominantly winter roads) | 9.2 Miles |
| Trailhead/portage improvement projects | 2 |
| Special use temporary road authorizations (9 roads) | 1.3 Miles |
| Existing gravel pits to maintain (3 potential expansions) | 12 |
| Potential gravel sources to evaluate | 8 |
| Parking area expansions | 2 |
| Stream crossing improvements | 5 |

| Road Type | Existing Miles | Proposed Change in Miles | Proposed Action Resulting Miles |
|---------------------------------|-----------------------|---------------------------------|--|
| OML 1 winter | 118.2 | -7.1 | 111.1 |
| OML 1 all-season | 19.9 | -1.4 | 18.5 |
| OML 2 (existing OML 1 to OML 2) | 32.3 | 0.9 | 33.2 |
| OML 3 | 9.5 | 0 | 9.5 |
| OML 4 | 0.4 | 0 | 0.4 |
| OML 5 | 18.4 | 0 | 18.4 |
| Total | 198.7 | -7.6 | 191.1 |

This original Proposed Action was not carried forward for detailed analysis primarily because the interdisciplinary team conducted further analysis and made modifications that would better meet Forest Plan direction. The interdisciplinary team also specified stand implementation direction and incorporated some data corrections/updates relative to the original Proposed Action. In conclusion, the interdisciplinary team modified the Proposed Action by using updated data; dropping stands to better comply with some Forest Plan direction (for example, harvest restrictions on thin soils, lynx habitat, and management area direction); including temporary road estimates; specifying the potential gravel pit, adding an easements and road access permits, changing some fuels treatment proposals, and refining the proposal by including more site-specific stand implementation direction. The Modified Proposed Action, which is also called Alternative 2, is analyzed in Chapter 3.

Alternative B: Harvest mature stands in addition to old/oldgrowth stands to increase acres in the young class and provide more marketable products for the local economy

Some commenters suggested that the Forest Service increase the amount of harvest in the Project area for a variety of reasons as shown by the following excerpts from scoping comment letters.

“Even though, the Forest Service is addressing the need to manage the over-mature stands for future conditions, it is also important for the Forest Service to address the condition of the fully-stocked, currently mature timber (i.e. aspen around 50-60 years of age). The Forest Service is charged with providing quality wood products and supporting the local economies while also protecting the health of the Forest. Fully stocked stands produce the highest quality wood, impact less acres due to the higher cords/acres, and present numerous efficiencies for both the contract holder and the consuming mill.”
Ainsworth Engineered (Patrick Orent and Ken Jacobson)

“The EIS scoping proposal states that “Many stands within Management Areas have reached maturity and are not transitioning to long-lived species.” We suspect that these stands are under stocked and in need of timber management. MFI recommends that these stands be categorized and be actively managed to capture mortality, produce timber and release the regeneration that may be occurring.” MFI (Tim J. O'Hara)

The IDT used the most accurate stand data available. The data indicates that the Project area does have a number of acres at and above minimum harvest age (nearly 20,000 acres). Therefore, this alternative is addressed to some extent in Alternative 2. However, the full extent of this alternative was eliminated from further analysis because it ultimately exceeds Forest Plan direction for lynx.

After further review and analysis of the Proposed Action, the IDT found that actually fewer acres could be harvested in order to meet Forest Plan direction for lynx (S-WL-1). The Modified Proposed Action, Alternative 2, includes the appropriate amount of harvest that meets Forest Plan direction for lynx (S-WL-1) and the multiple aspects of the purpose and need for the Border Project. Therefore, another alternative that includes additional harvest was not considered in full detail.

Alternative C: Allow forest succession to occur

Some commenters suggested that the Forest Service allow forest succession to occur naturally in the Project area for a variety of reasons as shown by the following excerpts from scoping comment letters.

“I believe the USFS should cease attempting to create larger patches of young forest, since there already exist ample acres of this forest type on the Superior. Old trees should be allowed to grow older and larger, since their accumulated growth and carbon sequestration is impossible to achieve otherwise; it is circular reasoning to cut down old/mature growth so that it becomes less fragmented future old/mature growth. Simply allow the older patches to follow natural senescence and fire processes, and the spatial situation will correct itself, given enough time. More man-made disturbance will not right past forest management wrongs. More, not less, upland mature patches > 300 acres

should be the USFS goal. Harvest (clearcutting) will set the biological clock back to zero.” Steve Doyle

The IDT considered existing and projected patch distribution during alternative development. Maintenance of the number of patches greater than 300 acres was therefore a part of the action alternatives. If no action were taken, of the existing 18 patches, four would succeed to a young age and one new patch was created due to a large patch breaking up to form two patches. In Alternative 2, of the existing 18 patches, four would succeed to a young age, and of the three affected by management, two were not functional (because of their very irregular shape) and one would succeed to a young age by 2017. Therefore, the number of upland mature patches greater than 300 acres would effectively be reduced by only one in Alternative 2 and this is well within Forest Plan direction.

The Forest Plan provides direction for spatial management on pages 2-23 to 2-27. The Border Project alternatives must meet the Forest Plan direction. The EIS Chapter 3 vegetation and wildlife sections include more information on the existing and projected distribution (and size) of young and old forest patches.

“This project proposes to convert 19% of dry mesic red/white pine forest (7,425/38,300 acres) to young age class, nearly twice the Forest Plan’s 10% prescription. What about creating other age classes? According to Forest Plan species goals, how much aspen and fir will this reduce in the area and how much spruce, cedar, pine and tamarack will be increased? Within aspen clearcut stands will “increase” species be left? What about forest type goals? The Scoping document states that some patches are “very old” and are going to turn over into young spruce-fir-pine and then need to be managed. Yet if these patches are mature aspen, natural succession would meet both the species and age class goals. Regeneration to young aspen would run counter to forest type and species goals. Stands slated for harvest that do not meet vegetation goals but are attempts to meet lumber and economic goals with activities that have an ecological purpose should be excluded from this project. One way the Chippewa National Forest has done this is by lowering the cut age for aspen where forest type conversion is needed.” Sierra Club (Annah Gardner)

The Border Project Proposed Action did propose to convert 19% (7,425/38,300 acres) of the Project area to the young age class for the dry/mesic red/white pine LE, however, the number of acres being converted (7,425 acres) needs to be compared against the forest-wide acres for the Dry-mesic Red and White Pine LE (184,546 acres). When this is done, the Project area only proposes converting 4% (7,425/184,546 acres) to the young age class. Stands slated for harvest do meet vegetation goals; while at the same time meet Forest Plan objectives of providing commercial wood for mills in northern Minnesota that is sustainable over time. There would be no need to lower cutting age for aspen for working towards desired forest conversion conditions.

Natural succession would not meet the project purpose and need for LEs or for providing a marketable product. The effects of natural succession are addressed to some extent in Alternative 1 in the vegetation and wildlife sections of Chapter 3. Those sections show that Alternative 1 does not move the area towards Forest Plan LE objectives as well as the action alternatives do.

Alternative D: Increase opportunities for non-motorized recreation

Some commenters suggested that the Forest Service increase opportunities for non-motorized recreation for a variety of reasons as shown by the following excerpts from scoping comment letters.

“The Forest Service should expand the Purpose and Need of the Project to explore increased opportunities for non-motorized recreation outside of the Boundary Waters Wilderness. The Friends cannot help but note the almost total absence of discussion about opportunities to protect and expand non-motorized recreational opportunities in the Superior National Forest as part of proposed vegetative management projects. In fact, the only discussion related to recreation in the Border Project scoping packet involves increased access to ATV trails and parking lots. Moreover, there is no discussion about the potential impacts of the Border Project’s activities on recreational use of the Vermilion River – a popular designated state canoe route – and the Friends urge the Forest Service to examine this carefully in its environmental impact statement. Chapter two of the Superior National Forest Plan identifies “recreation” and “trails” as major resource program areas and outlines a series of desired conditions for recreational activity in the Forest. Among them is the desire to “[emphasize] recreational activities and opportunities appropriate to remote natural settings”¹ and to “provide non-motorized trail opportunities in a variety of forest settings.”² The Friends have witnessed little movement toward this desired condition from the Forest Service in recent years. As visitation of the BWCAW continues to skyrocket, the Friends feel that is absolutely critical that the Forest Service actively expand and promote non-motorized recreational opportunities outside the designated Wilderness. Roadless Area Conservation Rule lands and IRAs are likely candidates for additional opportunities, but there are certainly others. The Friends stand ready and willing to partner with the Forest Service in such an effort.” Friends of the Boundary Waters Wilderness (Brian S. Pasko)

“Opportunities for Non-Motorized Recreation: NMW [Northeast Minnesotans for Wilderness] notes that no improvements in opportunities for non-motorized recreation such as hiking trails are proposed in the Border Project. This despite the high scenic value of much of the area. With the BWCAW at capacity, alternatives for non-motorized recreation should be expanded in SNF. The Border Project area provides opportunities for this expansion.” Northeast Minnesotans for Wilderness (Brad Sagen)

This suggested alternative was not considered in detail because the purpose and need of the Border Project focuses on vegetation management and the associated transportation system. Non-motorized recreation was not included as a purpose for the project. Not every project proposal can meet every part of the Forest Plan. Effects to recreation uses are analyzed in this EIS Chapter 3 Recreation/social section.

The Forest continues to maintain existing non-motorized recreation opportunities and develops specific improvement projects as funding and resources allow. For example, two projects on the west side of the Forest are currently underway (Norway Trail and Curtain Falls portage).

Alternative E: Maintain existing and increase opportunities for public motorized access

Some commenters suggested that the Forest Service maintain existing and increase opportunities for motorized recreation for a variety of reasons as shown by the following excerpts from scoping comment letters.

“Would like to see more ATV/snowmobile roads.” Leslie Atchison Radcliffe

All roads (existing and future) should be left open for public use. As a person who lives here and pays taxes here. I have a constitutional right to use these lands and roads for my personal use. We need more ATV roads/trails – every one of those roads should be open for ATVs! Bruce R. Olson

This suggested alternative was not carried forward for detailed analysis primarily because providing more access for motorized recreation is not part of the Border Project's purpose and need. Not every project proposal can meet every part of the Forest Plan. Motorized use of existing roads is being addressed in the Forest-wide Travel Management Project analysis currently underway on the Superior National Forest. Effects to recreation uses are analyzed in this EIS Chapter 3 Recreation/social and Tribal sections.

Proposals for temporary roads and proposals to add system roads were based on their need for long-term vegetation management. Temporary roads needed for the Border Project would not be open to public motorized use and would be decommissioned after use. This follows Forest Plan direction for temporary roads. Roads added to the National Forest System would generally not be open to public motorized travel.

The Forest continues to maintain motorized recreation opportunities and develops specific improvement projects as funding and resources allow. For example, a reroute is currently being planned on the Taconite Snowmobile Trail.

Alternative F: Restore Stand Conditions without harvest and use prescribed fire and planting

Some commenters suggested that the Forest Service maintain restore stand conditions without harvest and use prescribed fire and planting rather than commercial timber sales as shown by the following excerpt from a scoping comment letter.

“The Sierra Club is unclear with what the strategy and plans are for fuels reduction within the Border Project area, a more detailed explanation is required. The Sierra Club believes that prescribed burning is the optimal method of reducing hazardous fuels and returning the forest to a more natural state. The Sierra Club does not support using harvest and other mechanical treatments for fuel reductions.” Sierra Club (Annah Gardner)

Treatments with a primary purpose of fuel reduction are included in the Border Project action alternatives to provide protection of areas near Crane Lake and Johnson Lake. Alternatives 2 and 3 include a proposed underburn about 2.5 miles west of the Crane Lake community and near the Voyageur Snowmobile Trail (248 acres). Alternative 2 also includes a proposed underburn near Johnson Lake (110 acres). In addition, Alternative 2 would create about 100 timber sale brush disposal piles (about 2,000 acres)

and Alternative 3 would create about 90 timber sale brush disposal piles (about 1,800 acres).

The benefits of harvest as it relates to reducing the risk of wildfire are also discussed in the Border Project EIS fire risk and fuels section. Using prescribed fire instead of clearcutting to meet Landscape Ecosystem objectives does not meet the “providing commercial wood” products part of the Border Project’s purpose and need, nor does it follow decisions made with the Forest Plan EIS. Therefore, this alternative was not considered in detail.

In addition, the substitution of prescribed fire in place of harvest methods was addressed in the Forest Plan EIS Record of Decision on page 6: "Timber harvest will be the primary tool for reaching vegetation objectives." Changing Forest Plan direction is outside the purpose and need for the Border Project. Page 14 of the Forest Plan EIS Record of Decision reads: “Concerns were raised about using stand replacement fire and burning up material that could be used commercially. Where areas are identified as suitable and available for timber harvest, commercial timber sales will be used as the primary management tool.” On page 1-9, the Forest Plan reads: “To the extent practical, timber management will be used to emulate naturally occurring disturbances.”

Alternative G: Decommission more roads

Some commenters suggested that the Forest Service decommission more roads as shown by the following excerpt from a scoping comment letter.

“The Sierra Club supports efforts to fully decommission and close unneeded roads and to improve stream crossings. The Sierra Club would like the Forest Service to consider additional roads in the Project area for decommissioning. The Sierra Club is concerned that in the past temporary roads have not been successfully closed, and were then used by the public. The Sierra Club is concerned that building more roads has several negative effects including damage to soil and water resources and adverse impacts to species, especially lynx. A more detailed analysis must be conducted to address the affects that additional roads will have on the area.” Sierra Club (Annah Gardner)

Closure of temporary roads has been successful in the Project area and on the Forest. The 2002 District Monitoring Report shows examples of successful temporary road closure in the Echo River area. The 2005, 2006, and 2007 Superior National Forest Monitoring and Evaluation reports also include examples of successful road closures.

The EIS includes analysis and information on road effects per agency and Forest Plan direction. The public Scoping Package was not intended to be an environmental analysis and therefore did not include potential effects of roads on various resources.

There is an overall reduction in system road miles in Alternatives 2 and 3. Therefore, this suggestion of decommissioning more roads was partially addressed in the action alternatives.

Alternative H: Maintain existing gate locations that prohibit public motorized access along Forest Roads 487A and 487AB that lead to the Goldmine State Migratory Waterfowl Refuge

Some commenters suggested that the Forest Service maintain the existing gates on Forest Road 487A and Forest Road 487AB that currently limit public motorized access to the area including the Goldmine State Migratory Waterfowl Refuge, as shown by the following excerpt from a scoping comment letter.

“This area of the Superior National Forest has many roads. Both system and non system. Although addressed to some extent in the transportation plan for the forest, it inadequately provides for non motorized recreational experiences outside of the BWCAW. Since its construction, Forest Road 487 has been gated and motorized use has been restricted, providing quality non motorized recreational opportunity for the public. This area provides several miles of walking trails for ruffed grouse hunters and a large area free of ATV's for big game hunters. It is important the FS address the need of the non motorized public that use the forest outside of the BWCAW by maintaining areas such as this. Please consider designating this area as one closed to motorized use.”

Kayla and Brent Keigley and Patrick Lightfoot

Making decisions specifically for non-motorized public access does not fit within the Border Project purpose and need that relates to vegetation management and the associated transportation system. The Forest-wide Travel Management Project analysis is making decisions on motorized use of Forest roads. Disposition of gates in the Border Project will primarily relate to road management, maintenance, and the need for administration of private land access permits.

The primary intent for the first Goldmine gate (on FR 487) when it was installed in the spring of 1988 was to protect the road surface. This administrative action, as described in a 1988 Gate Management Plan, stated that the roadbed would not support year-round use. In addition, since a portion of the road crossed a small segment of private land, a verbal agreement was made with the landowner near the gate to only allow commercial use on the road. In 1991, the Forest Supervisor signed an order that prohibited motorized use on FR 487 to protect the road surface and reduce road maintenance costs.

In 1992, the Forest Service and MN DNR entered into an agreement to create an impoundment to enhance waterfowl and other wetland wildlife habitat and restrict all unauthorized motorized access to the dam that created the water impoundment. Landowners and St. Louis County lease holders who needed access to their cabins behind the gate were issued keys in 1993. On July 14, 1993 the Goldmine State Waterfowl Refuge was formally established by the State. A second gate was installed on Forest Road 487AB to restrict public motorized use to the refuge. People who own or lease property behind the gates have been issued keys to the gates.

The outcome of the gates has evolved into a situation where the general public does not have motorized access while the people who own or lease property behind the gates do use motorized vehicles on FR 487A and 487A B to access their property or lease. The MN DNR has emphasized that motorized access to the refuge should be restricted and has acknowledged that the gate(s) could be moved closer to the impoundment.

Alternatives 2 and 3 include a proposal to move both gates as shown on Maps 2 and 3. One gate would be located on FR 487ABA just south of the FR 487A/487ABA intersection. The other gate would be located on FR 487A just past the last private entity. The public alternative to keep the gates in their existing location is actually Alternative 1, No Action. The scoping response submitted by the MN DNR suggested moving the gate to the intersection of 487 and 487AB which would only affect one landowner's access. The effects of not moving the gates are discussed in this EIS under effects that relate to public access. The public and State suggestions for the gates were not considered in further detail for the following reasons that support the Border Project proposal.

The Border Project Alternative 2 and 3 proposed gate locations would eliminate the need for keys and involve managing only one special use road access permit, while still protecting the Goldmine State Migratory Waterfowl Refuge from public motorized traffic. District personnel have inspected these sections of road and believe that the road surfacing can withstand motorized vehicle use within the current road maintenance budgets.

In the Holmes/Chipmunk EIS (2003), road density for wolf had been analyzed and was provided as additional rationale for the gate locations. However, under the new Forest Plan (2004) presence or absence of the gates does not change the maintenance level of the road and therefore does not affect road density figures associated with wolf. Finally, public motorized access would meet current Forest Plan direction for General Forest-Longer Rotation Management Areas in providing dispersed recreation opportunities with improved access to the general public. Entities such as the 1854 Authority showed support for improved public motorized access in this area while still restricting access to the dam and refuge impoundment.

Alternative I: Do not expand the Johnson Lake parking area, create overflow parking along the road, develop a parking area for ATVs, and maintain the existing portage

Some commentors had further suggestions/options for proposed improvements to the Johnson Lake parking and portages proposals as described below.

“The enlarging of the current parking lot to accommodate 30 plus vehicles: We would rather see the current lot squared off and the sides of the road, approximately 1/4 mile running from the lot, filled in to allow for additional overflow parking and for vehicles with trailers.

The Portage Trail Reconstruction: The Portage Trail, in our opinion, is quite adequate for accessing this three lake system. By upgrading the current condition of the trail and adding some well needed culverts in the low lying areas would greatly improve the trails integrity. We have had an understanding with the USFS that at the Trailhead there would be an obstruction built to limit the size of boats that could be trailered down the Portage Trail. The current obstruction is inadequate and much too wide.

ATV parking lot near dock area: We have been asking the USFS for over 15 years to designate an area off the trails end so we could assist in the development of a place to park our ATVs and trailers.

Dock maintenance and upgrading: The dock system is currently in need of some repair. A yearly maintenance schedule should be created between the USFS, Sherrick's Resort and the Lake Association.” Little Johnson Lake Association (Brad Saxhaug)

District personnel met with Mr. Saxhaug on May 16, 2008. Based on discussions at the meeting, this public alternative is quite similar to the more specific proposal now included in the DEIS Alternatives 2 and 3. Developing parking along the road leading to the portage was not considered in detail because it is a safety concern to encourage parking along a road. Expansion of the parking area is now similar to this suggestion by a member of the public. No major reconstruction of the portage is now being planned and the District will strive for continued and improved maintenance with assistance from the State. An ATV parking area is now incorporated into the proposal as the Mr. Saxhaug suggests.

2.5 Comparison of Alternatives and Effects

This section provides an overview and comparison of the effects of the alternatives. The first section shows context and intensity by displaying the extent of the primary vegetation management activities proposed in the Management Areas. The remaining sections show a summary comparison of the effects of the alternatives using the primary resources and indicators analyzed in this EIS.

2.5.1 Management Areas

Management Areas

Table 2.7 displays differences between Alternatives 2 and 3 for the quantity and kind of vegetation treatments proposed within each management area (MA). The table shows that more harvest would occur in the General Forest and General Forest – Longer Rotation MAs than in the Semi-primitive Motorized Recreation, Recreation Use in a Scenic Landscape, and Eligible Wild, Scenic, and Recreation River MAs in both alternatives. The table also shows that the majority of young forest would be created in the General Forest and General Forest – Longer Rotation MAs in both alternatives. Young forest is created through even-aged harvest such as clearcut with reserves and shelterwood harvest. A large portion of activities that would occur in the Semi-primitive Motorized Recreation, Recreation Use in a Scenic Landscape, and Eligible Wild, Scenic, and Recreation River MAs would improve stand conditions with and without harvest.

| Table 2.7 Primary Treatment by Management Area in Alternatives 2 and 3 (Acres on NFS land*) | | | | |
|--|--------------------------------------|--|--------------------------------|-------------------------|
| Management Area | Creating Young Stands (0 – 9) | Improving Stand Conditions w/ Harvests (no change in age) | Non-harvest Restoration | Total MA Treated |
| Alternative 2 | | | | |
| General Forest | 4,244 | 1,805 | 328 | 6,377 |
| General Forest - Longer Rotation | 2,101 | 434 | 897 | 3,432 |
| Semi-primitive Motorized Recreation | 751 | 206 | 176 | 1133 |
| Recreation Use in a Scenic Landscape | 463 | 182 | 438 | 1083 |
| Eligible Wild, Scenic, and Recreation River | 677 | 188 | 243 | 1108 |
| Total Treatment Type | 8,236 | 2,815 | 2082 | 13,133 |
| Alternative 3 | | | | |
| General Forest | 3,897 | 1,805 | 328 | 6,030 |
| General Forest - Longer Rotation | 1,924 | 434 | 772 | 3,130 |
| Semi-primitive Motorized Recreation | 466 | 70 | 161 | 697 |
| Recreation Use in a Scenic Landscape | 745 | 198 | 438 | 1,381 |
| Eligible Wild, Scenic, and Recreation River | 342 | 130 | 243 | 715 |
| Total Treatment Type | 7,374 | 2,637 | 1,942 | 11,953 |

* All acres shown are estimates based on stand acres. Actual acres treated to create young stands may be less than the totals shown above because final design of harvest units take into account such as legacy patches, reserves islands, and other unit design factors.

2.5.2 Comparison of Effects

This section provides a brief summary comparison of the effects of the alternatives. Table 2.8 provides data for major indicators for each resource area.

Vegetation age class, species composition, and diversity under Alternative 1 would move farther away from Forest Plan desired conditions and not contribute to the project’s purpose and need. Alternative 2 would contribute more than Alternative 3 to age class and species composition Forest Plan objectives and the project’s purpose and need. By treating more acres, Alternative 2 also reduces risk of unwanted wildfire more than Alternative 3. Alternative 2, with more harvest than Alternative 3, would have slightly more economic benefit than Alternative 2.

The projected number of upland patches (greater than 300 acres) would be the same in Alternatives 2 and 3. Alternative 1 would result in three more upland patches than Alternatives 2 and 3, but would actually have a decrease from the existing condition because some of the very old stands would succeed to younger age classes.

The primary difference between Alternatives 2 and 3 in relation to potential impacts to soils would be the acres affected by landings and skid trails, with Alternative 2 affecting more acres than Alternative 3.

Looking at the water quality effects in a combined sense, the differences between alternatives would be minor. Alternatives 2 and 3 have the same long-term beneficial effects through the removal of roadways and crossings. There is slightly more short-term effect associated with the temporary road construction in Alternative 2. Hence, Alternative 3 can be considered to have the greatest potential to benefit water quality and watershed health when the entire Analysis Area is considered, followed by Alternative 2 and then Alternative 1.

Alternative 1 emerges as the alternative with the lowest risk of weed spread and subsequent negative impacts because there would be no ground disturbance. Alternatives 2 and 3 have a similar and moderate risk of weed spread and negative impacts. The majority of any new NNIP infestations would be along roads where they can be managed, although a small percentage of infestations could get started within stands where NNIP could compete with native plant species and degrade native plant communities. The scale at which this effect would occur would be small because of a high percentage of winter harvest and winter access routes, operational standards and guidelines, and ongoing weed treatments on the Superior NF.

Alternative 2, with more proposed harvest than Alternative 3, would result in an estimated 627 days of harvest near areas of concern to the public compared to 342 days project for Alternative 3. In addition, Alternative 3 would have more activity than Alternative 2 in areas managed for scenic quality.

The Echo River Forest Plan Inventoried Roadless Area would continue to meet inventory criteria in all alternatives. The existing winter road would remain. Harvest treatments are not proposed in any of the alternatives. The only activity proposed is in Alternative 2 and it is an estimated 32.8 acres of non-harvest brush shearing to improve moose and woodcock habitat.

The economic effects resulting from each action alternative would be almost identical. The benefit/cost ratios resulting from Alternative 2 and Alternative 3 are 0.47 and 0.48, respectively. A ratio of greater than 1.00 indicates that benefits exceed costs. These ratios reflect the high costs of planting associated with forest type conversion, and the low value of timber that the region is currently experiencing. Revenue figures do not include the benefits that are difficult to quantify, such as recreational opportunities, wildlife habitat, visual quality, and water quality. Alternative 1 (no action alternative) has no management activities, and therefore there would be no economic benefit or cost.

2.5.3 Comparison of Effects on Resources Analyzed

| Table 2.8 Summary of Environmental Effects | | | | | |
|---|--|-----------------|---------------|---------------|---------------|
| | | Existing | Alt. 1 | Alt. 2 | Alt. 3 |
| Vegetation - Landscape Ecosystem (LE): Acres in 0 – 9 Age Class in Project Area | | | | | |
| Jack Pine/Black Spruce LE | | 475 | 237 | 1,075 | 1,075 |
| Dry mesic Red Pine/White Pine LE | | 2,280 | 786 | 7,972 | 6,764 |
| Lowland Conifer LE | | 0 | 0 | 63 | 57 |
| Wildlife Habitat – Number of Upland Patches ≥ 300 Acres in 2014 | | | | | |
| Upland mature/old forest patches | | 18 | 15 | 11 | 11 |
| Recreation/social | | | | | |
| <i>Indicator:</i> Estimated days needed to complete harvest near areas of concern to the public | | | 0 | 627 | 342 |
| <i>Indicator:</i> Miles of road that are open to public OHV use located within ½ mile of BWCAW and VNP | | | 0 | 0 | 0 |
| Scenic Quality | | | | | |
| Acres of conversion, enhancement, or diversity planting in high Scenic Integrity Objective (SIO) areas | | | 0 | 1,112 | 855 |
| Acres of conversion, enhancement, or diversity planting in Management Areas with an emphasis on scenery | | | 0 | 890 | 656 |
| Soils | | | | | |
| Acres impacted by landings and skid trails | | | 0 | 443 | 400 |
| Acres of new system road | | | 0 | 5.3 | 5.3 |
| Acres of road decommissioning | | | 0 | 23.5 | 23.5 |
| Water Quality and Watershed health | | | | | |
| Road miles following all implementation | | | 227.8 | 222.2 | 222.2 |
| Number of stream crossings following all implementation | | | 92 | 89 | 89 |
| Fire Risk and Fuels | | | | | |
| High and medium risk acres treated | | | 0 | 3,089 | 2,645 |
| Non-native Invasive Plants (NNIP) | | | | | |
| Acres of treatment units adjacent to BWCAW and VNP | | | 0 | 332 | 47 |
| Miles of new upland road construction on National Forest System land | | | 0 | 33.8 | 29.2 |
| Acres of upland commercial timber harvest units within 50 feet of NNIP occurrence | | | 0 | 1,356 | 1,455 |
| Economics | | | | | |
| Benefit/Cost Ratio | | | 0 | 0.47 | 0.48 |
| Total Revenue (\$) | | | 0 | 1,899,544 | 1,722,450 |
| 25% payment to counties (\$) | | | 0 | 474,886 | 430,613 |
| Forest Plan Inventoried Roadless Area | | | | | |
| Acres of proposed non-harvest restoration | | | 0 | 0 | 32.8 |
| Miles of system road | | | 1.3 | 1.3 | 1.3 |