3.16 Economics

3.16.1 Summary

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 (Table 3.16-1). 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. However, 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 would have no economic benefit or cost.

3.16.2 Introduction

The Border Project area is a small portion of the Superior National Forest (which is part of a large economic impact area). This analysis tiers to the social and economic analysis for the Superior National Forest found in the Forest Plan EIS (p.3.9-1 through 3.9-58). The Forest Plan EIS addresses the economic sustainability of the local communities including employment, income, present net value, considers recreation and tourism, commercial wood products and sustainable timberlands. A local project the size of the Border Project is likely to have only small measurable economic effects on the surrounding communities; therefore, it is appropriate to tier to the Forest Plan analysis for effects to tourism and the timber industry. A more appropriate analysis is to address the financial efficiency of the Border Project.

This section will address the financial efficiency of this Project and show how this Project would contribute to the US Treasury and to governmental units through 25% payments to local counties. This type of analysis helps determine whether the proposed activities represent a prudent means of achieving the resource objectives outlined in the Forest Plan. The Forest Service policies are to implement timber sales in the most cost efficient manner practicable to achieve objectives outlined in forest plans and facilitate a program where long-term benefits exceed costs (Forest Service Manual 2432). The main assumption in the financial efficiency analysis is all vegetation management activities identified in the action alternatives would be accomplished through timber harvest to the extent practicable. Discounting is the process of determining the present value of a series of future cash flows. A four percent discount rate was used for discounting in the analysis, which is standard for Forest Service financial efficiency analyses.

The Quick Silver PC version 5.004.45 (Forest Investment Analysis Program) was used in the efficiency analysis of the Border Project to calculate the return on each dollar spent. Quick Silver was also used to calculate the present net worth of each alternative. The costs calculated by Quick Silver included timber sale layout, administration, road planning and building, site preparation for planting, tree planting, burning activities. Also included in the cost calculations were costs associated with two recreation projects. The first project would include the expansion of the parking lot at Johnson Lake, as well as the new construction of an ATV parking lot along the portage to Johnson Lake. The second project would involve the placement of interpretive signs along the trails at the Vermilion Falls Recreation Area. These signs would explain some aspects of the

vegetation management taking place in the area, along with interpreting some of the natural features of the area.

Revenues, listed as "Present Value (benefits)", are based on potential timber sale receipts. Revenue figures do not include the benefits that are difficult to quantify such as recreational opportunities, wildlife habitat, visual quality, and water quality. These values are hard to quantify, as different people will place different values on the same object being measured. People place values on ecosystems and are willing to pay for their recreational opportunities, water quality, and wildlife or fish habitat regardless of their plans for current or future use. Such values are called option and existence values (Swanson and Loomis, 1996). See additional sections of Chapter 3 in this document for ecological values of the project.

As in all financial efficiency analyses, assumptions were applied in order for the analyses to result in assessments which could be compared. For the Border Project analysis, it was assumed that the proposed activities resulting from each alternative would begin to be implemented by the year 2010.

3.16.3 Analysis Methods

The economic analysis for the Border Project uses two indicators to compare the effects of the alternatives. The first indicator measures cost effectiveness through the financial efficiency analysis, and the second indicator is used to disclose each alternative's return to the U.S. Treasury and local governmental units.

The indicator selected to compare the financial efficiency of each alternative is the benefit/cost ratio for proposed activities. This indicator highlights the difference between the alternatives because it displays the benefits and costs of the Project which are quantifiable and vary by alternative.

The second indicator is the measure of return to the U.S. Treasury and local governments. The return to the U.S. Treasury consists of the total returns from potential timber sales, less the costs associated with required reforestation activities (both natural and artificial regeneration), other approved activities identified in the Knutson-Vandenburg Sale Area Improvement Plan, and salvage sale funds.

The Knutson-Vandenburg Act (K-V) is the authority for requiring purchasers of national forest timber to make deposits to finance sale area improvement activities needed to protect and improve the future productivity of the renewable resources of forest lands within timber sale areas. Certain activities such as funding artificial regeneration, stocking surveys, and site preparation (if needed) are required to be funded. Other activities such as tree release and wildlife habitat improvement are considered non-essential and are only completed if funding is available and approved by a responsible official. In the case of this analysis, all wildlife activities and tree release projects were included in cost calculations.

The returns to local governments are payments in lieu of taxes (PILT) and are based on receipts from federal land. These payments would be made by the federal government to state agencies and would then be distributed to local units of government. Payments would equal twenty-five percent of the total timber receipts (gross revenues).

3.16.4 Analysis Area

The geographic area considered for the economic analysis is the Border Project boundary. Only activities proposed within the action alternatives would be considered for the direct and indirect effects. The time period analyzed for direct and indirect effects is from 2007 (existing condition) until 2014. The main purpose of this analysis is to display cost effectiveness of the proposed activities and to determine if the action alternatives propose prudent means of achieving the resource objectives outlined in the Forest Plan. There would be no cumulative effects because there are no other revenue producing projects within the Border Project area.

3.16.5 Affected Environment

The Border Project is located within extreme northern St. Louis County. The centers of development located nearest the Project area include the small towns of Buyck, Crane Lake, Orr, Ash Lake, Cook, Tower, Nett Lake, and Ely. All of these communities are home to many people involved in the forest products industry.

3.16.6 Environmental Consequences

Alternative 1 – No Action
Direct and Indirect Effects

If Alternative 1 is chosen by the Responsible Official for implementation, no revenue producing activities would take place. Also, there would be no costs associated with the Project (Table 3.16.1); therefore, the benefit/cost ratio would be zero. There would obviously be benefits that are hard to quantify such as recreational opportunities, wildlife habitat, visual quality, and water quality.

Alternatives 2 and 3
Direct and Indirect Effects

Financial Efficiency

Revenues, listed as "Present Value (benefits)", are only based on timber sale receipts as these are the only revenues associated with the Border Project. The benefits (revenues) realized through timber harvests depend on market value and costs at the time of sale. For this analysis, the values of harvesting timber were calculated using the base period prices effective as of September 2008. Based on past and recent trends there has been a drop in stumpage prices. Minnesota's wood-products industry is heavily tied to the national housing market, and so the drop in stumpage prices has coincided with the poor housing market that is being experienced across the U.S. Therefore, revenue generated from the Border Project could be higher or lower than what is projected, depending on the implementation date of the Project and future market conditions.

Table 3.16.1 provides a comparison of the costs and benefits associated with the Project. The "Present Value (benefits)" column shows revenue that is generated from the Project. In this case, timber receipts are the only source of revenue. The "Present Value (costs)" column shows costs associated with the Project. Costs include such things as timber sale

preparation and administration, site preparation for tree planting, tree planting, recreation projects, stream crossing improvements, and fuels treatments.

As can be seen in Table 3.16.1, the costs of the project exceed the benefits of the project, which results in a benefit/cost ratio of less than one for both Alternative 2 and Alternative 3. There are two main reasons why the costs are greater than the benefits. First, stumpage prices are currently at low levels, resulting in less revenue generated for each timber sale. Second, costs associated with reforestation activities, such as converting a forest type over to conifer, as well as increasing diversity within a stand through planting is very high. Planting is generally not needed to adequately regenerate a harvested stand; however, planting is needed to ensure success in attaining the desired tree species composition.

Table 3.16.1 Financial Efficiency Summary* Based on All Actions

Description	Alt. 1	Alt. 2	Alt. 3
Present Value (cost)	$0.00	$4,049,817	$3,618,795
Present Value (benefits)	$0.00	$1,899,544	$1,722,450
Benefit/Cost Ratio**	0.00	0.47	0.48

* At 4% discount rate

** A value greater than 1.0 indicates benefits exceed costs

Alternative 2 and Alternative 3 have nearly identical benefit/cost ratios of 0.47 and 0.48, respectively. While Alternative 2 has more revenue generated than Alternative 3, it also has higher costs associated with it, as compared to Alternative 3. Alternative 3 revenues (benefits) and costs are proportionally less than Alternative 2, resulting in the nearly identical benefit/cost ratios. Alternative 3 has lower revenue because of less timber being harvested, and has lower costs due to fewer acres being planted with conifers.

Returns to Federal and Local Governments

Timber harvest receipts from the Border Project would result in measurable revenues for the U.S. Treasury and local governments. Table 3.16.2 shows the estimated volume to be harvested for each alternative, in addition to the estimated total revenue that would go to the U.S. Treasury and to local governments. At a minimum, $0.50 of revenue for every one thousand board feet harvested is returned to the U.S. Treasury. The amount can be higher based on certain factors. Additionally, twenty-five percent (on average) of revenues generated from timber sales are returned to local governments in the area where the timber was harvested.

Alternative 2 generates the most amount of revenue that would be returned to the U.S. Treasury and local governments. This is simply due to the fact that there would be more timber harvested under Alternative 2 than would be harvested under Alternative 3. On the other hand, Alternative 1, which is the no action alternative, would see no money generated for the U.S. Treasury or local governments as there would be no timber harvested under this alternative.

Table 3.16.2 Returns to Local Government and the US Treasury.			
Description	**Alt. 1**	**Alt. 2**	**Alt. 3**
Total Volume Harvested* (MMBF)	0	54	49
Total Revenue	0	$1,899,544	$1,722,450
Return To US Treasury	0	$27,122	$24,704
25% Payment To Counties	0	$474,886	$430,613
*Total estimated volume is listed in million board feet (MMBF).			

3.16.7 Cumulative Effects

The Forest Plan used the FEAST and IMPLAN economic models when analyzing the Superior National Forest's cumulative economic impact under the Forest Plan FEIS Modified Alternative E (Forest Plan FEIS, p.3.9-18, Table ECN-11). The economic indicators within IMPLAN/FEAST used to display cumulative impacts were the number of jobs and the associated income within the first decade of the Forest Plan. The overall volume of forest related jobs in the local economy was found to be minor and did not change much between the alternatives analyzed in the Forest Plan FEIS. For this reason, the economy-wide effects of any alternative of the Border Project would be minimal.

Within the rural communities of the surrounding area, particularly in very small communities, the loss of a single job may be very important to the community, even though it may be barely noticeable within the larger economy. Direct and indirect effects may be considerable for individual persons, families, or businesses within the analysis area. However, despite the differences in alternatives, the economy-wide effects of any alternative would be minimal.