

VANDERHOOF LAND AND RESOURCE MANAGEMENT PLAN

**SOCIOECONOMIC AND ENVIRONMENTAL ASSESSMENT OF BASE CASE
AND CONSENSUS LAND USE PLAN**

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VANDERHOOF LRMP BASE CASE AND CONSENSUS PLAN

SOCIO-ECONOMIC MULTIPLE ACCOUNTS EVALUATION SUMMARY

| KEY ACCOUNTS | BASE CASE TRENDS (INCL. TSR, FPC, PAS) | CONSENSUS PLAN VS BASE CASE |
|---|---|---|
| ECONOMIC DEVELOPMENT SUMMARY | <ul style="list-style-type: none"> • 55-85 PYs at risk after yr 25 due to timber supply impacts of FPC / PAS. • Continued slow growth in economy due to tourism, in-migration, retirement incomes, VA wood & First Nations investment. • Gradual decrease in % employed in goods-producing sectors, resulting in modest average income decline. | <ul style="list-style-type: none"> • Increased certainty / cooperation created by Consensus Plan should create more favourable investment climate. • Consensus Plan more supportive of outdoor / wilderness tourism & other nature-based livelihoods. • Otherwise similar to Base Case. |
| SECTOR SUMMARY | | |
| Forestry | <ul style="list-style-type: none"> • 133,000 m3 - 165,000 m3 harvest reduction & 45-70 direct PYs at risk by yrs 25 to yr 51 due to FPC / PAS. Declines of 8%-10% /decade after initial harvest reduction. Offset by increased timber utilization, more labour intensive harvesting, intensive silviculture, growth in value-added. • Processing overcapacity problem due to non-renewable licenses & uncertainty re private supplies / timber imports. New processing proposals would exacerbate problem. • Will continue as dominant industry. | <ul style="list-style-type: none"> • Similar to Base Case, i.e. negligible timber supply implications beyond those due to FPC and PAS.. |
| Mining / Energy | <ul style="list-style-type: none"> • No mining projects proposed but some promising metallic deposits. • Endako mine life of 15 years could be extended if more reserves proven. • Promising Wolf gold / silver deposit precluded by Entiako RPAT Area. • Mining subject to cycles / trends in world metal prices, but significant job growth unlikely in short term. | <ul style="list-style-type: none"> • Wolf deposit excluded from Entiako PA and could be developed if feasible, subject to environmental assessment process. If mine proceeds, could employ 40-60 for 5-10 years. • Exploration allowed to continue on Swan and Capoose claims in Entiako PA. • Otherwise similar to Base Case. |
| Agriculture / Range | <ul style="list-style-type: none"> • FPC / PAS could limit grazing, but still significant underutilized agricultural land and Crown AUM's available for growth in ranching. • Market factors & historical trends suggest moderate growth in ranching. | <ul style="list-style-type: none"> • Less ALR in LI zones than in Base Case. • Less arable land in PAs than in Base Case. • Otherwise similar to Base Case. |
| Tourism / Recreation | <ul style="list-style-type: none"> • Continued strong growth fishing lodges / resorts & wilderness viewing operations. PAs will attract visitors. • Potential for high value tourism / guiding may be limited by decline in viewscapes & fish / wildlife populations. PAS / FPC will preserve some of these values. | <ul style="list-style-type: none"> • Higher % of outstanding / wilderness recreation opportunities, significant recreation features & fishing lakes in PAs & LI zones than Base Case. • Slightly less visually sensitive area in PAs / LI zones, but more in General Management (GM) than Base Case. |
| Trapping / Wildcraft | <ul style="list-style-type: none"> • Possible decline in trapping / hunting due to declines in some wildlife. • Wildcraft potential may be limited without more intensive management. | <ul style="list-style-type: none"> • Higher % of undeveloped watersheds in LI / GM & more stringent access restrictions will slow decline in wildlife important to trapping / hunting. • Better protection of old growth more supportive of wildcraft potential |

SOCIO-ECONOMIC EVALUATION SUMMARY (cont.)

| KEY ACCOUNTS | BASE CASE TRENDS | CONSENSUS PLAN |
|--|--|---|
| COMMUNITY STABILITY / QUALITY OF LIFE | <ul style="list-style-type: none"> • Population likely to continue growing slowly, with some fluctuations due to economic cycles, particularly for wood products & metal ores. • FRBC & gradual diversification of the forestry sector & economy will dampen disruptions. • Resolution of land claims could stimulate economic diversity & development but concerns about impacts on third parties. • New PAs & FPC will better protect fish / wildlife, scenic beauty, & recreation values important to local residents. There will still be some erosion in these values in long term. | <ul style="list-style-type: none"> • Consensus among key stakeholder groups on land use plan will enhance sense of community & cooperation. • Consensus Plan somewhat more supportive of fish & wildlife & recreation features & opportunities than the base case, although still some erosion of these values in long term. • Otherwise similar to Base Case. |
| FIRST NATIONS ISSUES | <ul style="list-style-type: none"> • High dependency on social assistance likely until claims settled. Recent timber sale supporting Native-owned reman facility will reduce dependency. • Concerns re impacts of continued timber harvesting on cultural / heritage sites & fish / wildlife resources. • Resolution of land claims will likely provide larger resource base, funding for investment / training, & more input into resource management. | <ul style="list-style-type: none"> • Consensus Plan provides somewhat better protection for cultural / heritage resources & fish & wildlife. • Otherwise similar to Base Case. |
| GOVT REVENUE | | |
| Local | <ul style="list-style-type: none"> • Slow increase in tax base due to increase in population & economic growth, interrupted by periodic economic downturns. • FRBC could result in region getting greater share of timber revenues. | <ul style="list-style-type: none"> • Consensus Plan somewhat more supportive of tourism component of tax base & would allow development of Wolf deposit. • Otherwise similar to Base Case. |
| Provincial | <ul style="list-style-type: none"> • Possible long term decline in resource revenues due to timber supply losses & higher harvesting costs associated with PAS, FPC, depletion of Endako orebody, land claims settlements. • Increase in revenues from tourism. | <ul style="list-style-type: none"> • Consensus Plan somewhat more supportive of tourism component of tax base & would allow development of Wolf deposit. • Otherwise similar to Base Case. |
| ECONOMIC EFFICIENCY | <ul style="list-style-type: none"> • Environmental, recreational & tourism benefits of Base Case result in higher log costs, longer term harvesting reductions, & would preclude potential benefits of Wolf gold / silver deposit. • Net value of harvest loss estimated at up to \$4.50 per BC household / yr. | <ul style="list-style-type: none"> • Consensus Plan would support more tourism benefits & allow benefits of Wolf deposit. • Similar foregone harvest as in Base Case but higher harvesting costs because of more LI & GM zones. |

SOCIO-ECONOMIC PRELIMINARY EVALUATION SUMMARY

VANDERHOOF LRMP CONSENSUS LAND USE PLAN

1.0 Summary of Socio-Economic Implications For the Vanderhoof LRMP

The quantifiable socio-economic implications of the Base Case and Consensus Land Use Plan on existing activities arise primarily from longer term timber supply impacts associated with new protected areas, and to a lesser extent, from forest management and visual quality designations, that differ from the Base Case. The socio-economic implications for other sectors are more difficult to quantify, and are generally less significant, because they are primarily related to potential, rather than existing economic activity, and take place over longer periods of time. This assessment is based on the resource and Geographic Information System (GIS) analyses provided by Government's Inter-Agency Planning Team (IPT) for the Vanderhoof LRMP Working Group.

Timber supply reductions in the Base Case could place 55 - 85 person-years (PYs) of income or employment at risk, representing about 1.2% - 1.5% of current income in the Vanderhoof Forest District. These impacts could likely be deferred for 25 - 50 years, depending on future AAC determinations by the Chief Forester. Further harvest reductions and employment impacts would occur after that time until long term harvest levels are reached. Despite harvest reductions, population and economic growth, and the gradual trend to a more service-based economy will likely continue. The above harvest impacts and trends would be similar in the Consensus Plan, but the higher proportion of Low Intensity / General Management Zones in the plan would be more supportive of wilderness tourism, and other nature-based livelihoods than the Base Case. Proposed investments in timber processing capacity could exacerbate existing overcapacity and community disruption resulting from future harvest reductions. Table 1 summarizes some key area statistics for selected indicators for the Base Case and Consensus Plans.

**TABLE 1
AREA ANALYSIS SUMMARY FOR KEY SOCIO-ECONOMIC INDICATORS**

| Key Indicators | Base Case Land Use | | | | Consensus Plan | | | | |
|--------------------------------------|--------------------|----------|---------|-----------|----------------|----------|---------|-----------|---------|
| | Total '000 Ha | % Low | % GM | % High | % PA | % Low | % GM | % High | % PA |
| High Metallic | 762.8 | 11.9 | - | 81.7 | 6.4 | 11.6 | 12.2 | 69.1 | 7.0 |
| Mineral Tenures | 77.7 | 8.8 | - | 83.9 | 7.0 | 11.2 | 41.2 | 40.2 | 7.3 |
| Mineral Occurrences (#) | 71 | 8 | - | 82 | 10 | 6 | 24 | 59 | 8 |
| Outstanding Recreation Opportunities | 4.2 | 48.1 | - | 45.7 | 6.3 | 84.7 | 0.3 | 8.8 | 6.7 |
| Very High Recreation Features | 3.6 | 49.6 | - | 50.7 | 5.2 | 88.0 | - | 7.7 | 5.2 |
| Primitive Recreation Opportunities | 18.8 | - | - | 29.4 | 70.6 | 9.9 | 20.4 | - | 69.7 |
| ALR | 142.9 | 9.3 | - | 89.8 | 0.2 | 1.6 | 0.1 | 98.3 | 0.2 |
| High Visually Sensitive Lands | 292.2 | 36.1 | - | 55.6 | 11.7 | 29.2 | 9.3 | 47.7 | 12.0 |

2.0 Base Case Land Use Scenario

2.1 Forestry

The Base Case is defined as the land use and resource management regime that could reasonably be expected in the absence of the LRMP, and includes the implications of Provincial land use initiatives such as the Timber Supply Review (TSR) process, Protected Areas Strategy (PAS) and Forest Practices Code (FPC).

The Ministry of Forests recent Timber Supply Review analysis for the Prince George TSA indicated that the estimated long run sustainable harvest level in the Vanderhoof Forest District is higher than the current apportionment and harvest level in the District of about 1.7 million m³. This currently unallocated timber could be used to defer the impacts of FPC and PAS in the Vanderhoof District. On the other hand, the unallocated timber in the Vanderhoof District may be required by Prince George Forest District licensees within the next few years in order to meet their license apportionments (i.e. to maintain harvest levels in the TSA as a whole). The Prince George regional office MOF estimates that this would require an increase in harvest levels to about 1.9 million m³, and would mean that the impacts of the Base Case in the Vanderhoof District could be deferred for up to 25 rather than 50 years.

Two timber supply alternatives are considered for purposes of impact assessment. The assumption that Prince George licensees do not require additional apportionments within the Vanderhoof District (thus permitting longer deferral of harvest reductions due to PAS and FPC), is referred to as Alternative 1. Implicit in this assumption is that any additional timber requirements of Prince George licensees necessary to maintain their apportionments can be met by underutilized timber elsewhere in the TSA.¹ The assumption that Prince George licensees do require additional apportionments in the Vanderhoof District (thus requiring harvest reductions sooner) is referred to as Alternative 2. The impacts on the forestry sector at the Vanderhoof District, Prince George TSA and provincial levels, of Alternatives 1 and 2 are summarized in Tables 2 and 3, respectively.

Alternative 1: Harvest level of 1.7 million m³ for 50 yrs / Without re-allocation

The timber supply analysis undertaken for Alternative 1 by the Ministry of Forests indicates that if the harvest were held at 1.7 million m³/yr., impacts in the Base Case due to the FPC and protected areas proposed by the Regional Protected Areas Team (RPAT)² could be deferred approximately 50 years. During the decade following that initial 50-year period, the Base Case could result in timber harvest reductions of approximately 8%, and potentially place at risk 47-55 forestry jobs and up to 15 spin-off jobs.³ The number of forestry-related jobs potentially placed at risk represent up to 1.5% of total employment and income in the Vanderhoof Forest District.

Harvest levels would continue to decline about 8% per decade until the long run sustained yield (LRSY) of about 1.3 million m³ is reached by year 81. LRSY is about 392,000 m³

¹ The AAC established by the Chief Forester for the Prince George TSA as of February 1, 1995, is approximately 300,000 m³ lower than the sustainable harvest level estimated in the Timber Supply Review. This does not take into account possible future supplies from sites currently considered low productivity or inoperable, although there are other offsetting factors which would have to be undertaken in future AAC decisions.

² Base Case PAs are assumed to be the Areas of Interest (AOIs) recently identified by the Regional Protected Areas Team (RPAT) that would meet Government's PAS target of 6.8% for the Vanderhoof Forest District.

³ This estimate assumes that harvest reductions due to the Vanderhoof LRMP are not prorated among all licensees in the Prince George TSA.

less than the current AAC in the Vanderhoof Forest District.⁴ Further forestry job losses are possible in the Base Case due to technological change / industry rationalization. Closure of one of the mills in the Vanderhoof Forest District once LRSY is reached (i.e. after 50-80 years), is a possibility in Alternative 1.⁵

Alternative 2: Harvest level of 1.9 million m3 for 25 years / With re-allocation

The timber supply analysis undertaken for Alternative 2 indicates that if the harvest were held at 1.9 million m3/yr., impacts due to the FPC and RPAT's proposed protected areas could be deferred approximately 25 years. During the decade following that initial 25-year period, the harvest would decline approximately 10% and thus the Base Case could potentially place at risk 58-68 forestry jobs and up to 19 spin-off jobs.⁶ The number of forestry-related jobs potentially placed at risk represent up to 1.9% of total employment and income in the Vanderhoof Forest District.

Harvest levels would continue to decline about 10% per decade until the long run sustained yield (LRSY) of about 1.3 million m3 is reached by year 56. LRSY is again about 392,000 m3 less than the current AAC in the Vanderhoof Forest District. A mill closure and the need for industry rationalization could occur sooner in Alternative 2 than in Alternative 1. It is likely that harvest reductions would have to begin immediately in this Alternative in order to avoid reductions below NDY.

TABLE 2*
POTENTIAL FORESTRY SOCIOECONOMIC IMPLICATIONS OF
VANDERHOOF LRMP BASE CASE^a
(ALTERNATIVE 1: 1.7 million m3/yr. for 50 years)

| | TSR Impacts | FPC & RPAT PA Impacts | Total |
|----------------------------------|---|-----------------------|-------|
| | Potential Timber Supply Impacts ('000 m3/yr)^b | | |
| Total Impact (0-50 Yrs) | 0 | 0 | 0 |
| Total Impact (51-60 Yrs) | 0 | 133 | 133 |
| % Decline Per Decade | ~ 8% per decade beginning year 51 | | |
| Total Impact Yr 81 (LRSY) | 0 | 392 | 392 |
| Total Impact Yr 111 (NDY) | 0 | 209 | 209 |
| | Potential Economic Impacts Years 51-60 | | |
| VANDERHOOF FOR. DIST. | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct ^c | 0 | 47-55 | 47-55 |
| Indirect & Induced | 0 | 8-15 | 8-15 |

⁴ Long Run Sustained Yield (LRSY), representing the long term harvest level on unmanaged stands, is about 1.3 million m3 for Alternatives 1 and 2. The long term harvest level for managed stands or Non-Declining Yield (NDY) is about 1.49 million m3 for both Alternatives. NDY is reached by year 110 in both Alternatives, and is about 209,000 m3 below the current Vanderhoof District AAC.

⁵ Timber supply modelling for Alternative 1 indicates that earlier harvest reductions (i.e. 5% for three five year periods beginning in year 5) would avoid reductions below the NDY, thus reducing the risk of mill closure in the long term.

⁶ This estimate also assumes that harvest reductions due to the land use plan are not prorated among all licensees in the Prince George TSA. Prorating would mean that the Vanderhoof Forest District would incur only about 18% of the harvest and employment impacts and the rest of the TSA would incur 82% of these impacts. However, the Vanderhoof District would also eventually incur a prorated share of harvest reductions due to land use decisions in the other LRMPs in the Prince George TSA.

| | | | |
|---|---|------------------|------------------|
| Total Jobs at Risk | 0 | 55-70 | 55-70 |
| % of LRMP Jobs ^d | 0 | 1.2%-1.5% | 1.2%-1.5% |
| W&S Impacts (\$M/yr)^e | | | |
| Direct, Indirect & Induced | 0 | 1.8-2.3 | 1.8-2.3 |
| % of LRMP Income | 0 | 1.2%-1.5% | 1.2%-1.5% |
| | | | |
| PR. GEORGE TSA (Incl. VFD) | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct ^c | 0 | 47-55 | 47-55 |
| Indirect & Induced | 0 | 17-30 | 17-30 |
| Total Jobs at Risk | 0 | 64-85 | 64-85 |
| % of TSA Jobs ^d | 0 | 0.1%-0.2% | 0.1%-0.2% |
| W&S Impacts (\$M/yr)^e | | | |
| Direct, Indirect & Induced | 0 | 2.0-2.6 | 2.0-2.6 |
| % of TSA Income | 0 | 0.1%-0.2% | 0.1%-0.2% |
| | | | |
| PROVINCIAL (INCL. PGTSA)^f | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct | 0 | 47-55 | 47-55 |
| Indirect & Induced | 0 | 34-60 | 34-60 |
| Total Jobs at Risk | 0 | 81-115 | 81-115 |
| W&S at Risk (\$M/yr) | | | |
| Direct, Indirect & Induced | 0 | 2.4-3.2 | 2.4-3.2 |
| Revenue at Risk (\$M/yr)^g | | | |
| BC (Stumpage/CIT/PIT) | 0 | 2.1-4.9 | 2.1-4.9 |
| Federal (CIT/PIT) | 0 | 0.7-0.9 | 0.7-0.9 |
| Municipal Revenue | 0 | 0.3 | 0.3 |
| Net Resource Value^h (\$/yr/BC household Yrs 51-60) | 0 | \$1.50-\$3.60/yr | \$1.50-\$3.60/yr |

* No Separate Table done for Consensus Land Use Plan since timber impacts are essentially negligible above and beyond the Base Case timber impacts.

TABLE 3*
POTENTIAL FORESTRY SOCIOECONOMIC IMPLICATIONS OF
VANDERHOOF LRMP BASE CASE^a
(ALTERNATIVE 2: 1.9 million m³/yr. for 25 years)

| | TSR Impacts | FPC & RPAT PA Impacts | Total |
|---------------------------------|--|-----------------------|-------|
| | Potential Timber Supply Impacts ('000 m³/yr)^b | | |
| Total Impact (0-25 Yrs) | 0 | 0 | 0 |
| Total Impact (26-35 Yrs) | 0 | 165 | 165 |
| % Decline Per Decade | ~ 10% per decade beginning year 26 | | |
| Total Impact Yr 61- LRSY | 0 | 392 | 392 |
| Total Impact Yr 111- NDY | 0 | 209 | 209 |
| | Potential Economic Impacts Years 26-35 | | |
| VANDERHOOF FOR. DIST. | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct ^c | 0 | 58-68 | 58-68 |
| Indirect & Induced | 0 | 10-19 | 10-19 |
| Total Jobs at Risk | 0 | 68-87 | 68-87 |

| | | | |
|--|---|------------------|------------------|
| % of LRMP Jobs ^d | 0 | 1.5%-1.9% | 1.5%-1.9% |
| W&S Impacts (\$M/yr)^e | | | |
| Direct, Indirect & Induced | 0 | 2.2-2.8 | 2.2-2.8 |
| % of LRMP Income | 0 | 1.5%-1.9% | 1.5%-1.9% |
| | | | |
| PR. GEORGE TSA (Incl. VFD) | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct Jobs at Risk ^c | 0 | 68-79 | 68-79 |
| Indirect & Induced | 0 | 11-23 | 11-23 |
| Total Jobs at Risk | 0 | 79-102 | 79-102 |
| % of TSA Jobs ^d | 0 | 0.2% | 0.2% |
| W&S Impacts (\$M/yr)^e | | | |
| Direct, Indirect & Induced | 0 | 2.6-3.3 | 2.6-3.3 |
| % of TSA Income | 0 | 0.2% | 0.2% |
| | | | |
| PROVINCIAL (Incl. PGTSA)^f | | | |
| Jobs at Risk (PYs/yr) | | | |
| Direct | 0 | 68-79 | 68-79 |
| Indirect & Induced | 0 | 46-95 | 46-95 |
| Total Jobs at Risk | 0 | 114-174 | 114-174 |
| W&S at Risk (\$M/yr) | | | |
| Direct, Indirect & Induced | 0 | 3.4-4.8 | 3.4-4.8 |
| Revenue at Risk (\$M/yr)^g | | | |
| BC (Stumpage/CIT/PIT) | 0 | 3.3-6.9 | 3.3-6.9 |
| Federal (CIT/PIT) | 0 | 1.0-1.3 | 1.0-1.3 |
| Municipal Revenue | 0 | 0.3 | 0.3 |
| Net Resource Value^h (\$/yr/BC household Yrs 26-35) | 0 | \$1.90-\$4.50/yr | \$1.90-\$4.50/yr |

*** No Separate Table done for Consensus Land Use Plan since timber impacts are essentially negligible above and beyond the Base Case timber impacts.**

Footnotes to Tables 2 & 3

(a) Base Case impacts are impacts attributable to Provincial PAS and FPC initiatives. FPC estimated as riparian and wildlife tree retention. Incremental impacts are impacts of the LRMP that are incremental to the Base Case. "LRSY" is the long run sustained yield for unmanaged stands. "NDY" is non-declining yield for managed stands.

(b) Harvest impacts estimated with timber supply model developed by Industrial Forest Service Ltd in consultation with MoF PG Region. Short term losses determined primarily by mature timber withdrawals and long term losses by productivity on affected forest lands. Current Vanderhoof harvest apportionment on Crown land is 1.7 million m³/yr.

(c) Direct jobs at risk in Vanderhoof based on 1993 resident employment per '000m³ harvested in logging of .15-.18 PY/'000m³ (incl. log hauling / road building, with & without silviculture) and in milling of .20-.23 PY/'000m³ of throughput (excl. Isle Pierre millworkers, with and without value added). 1993 private sector forestry resident employees in Vanderhoof F.D. (excl. Isle Pierre) estimated at 1,240. Direct jobs in Prince George TSA based on same PY coefficients as for Vanderhoof District, except for processing in Alternative 2, which assumes a weighted average of coefficients for Vanderhoof (incl. Isle Pierre) and Prince George Districts (.26-.30 PY/'000m³). 1993 forestry employees in Prince George TSA estimated at 7,838. (Source: Prince George TSR Socio-Economic Analysis)

d) Indirect and induced impacts for Vanderhoof F.D. derived with economic base employment multipliers (i.e. total direct, indirect and induced employment divided by direct employment) of 1.20 - 1.27 for logging and 1.16 - 1.30 for processing. Total employment in Vanderhoof F.D. estimated at 4,556 in 1991. Indirect and induced impacts for Prince George TSA derived with economic base multipliers of 1.43 - 1.61 for logging and 1.33 - 1.51 for processing. Total employment in the Prince George TSA estimated at 44,991 in 1991. Range of multipliers reflects assumptions about social safety net and worker migration. (Sources: 1991 Ministry of Finance economic base multipliers and economic dependency analysis, adjusted by MEI)

e) Average after tax W&S for forestry sector estimated at \$35,000/PY. Indirect and induced income impacts in the region based on average after tax W&S in these sectors of \$21,700/PY. (Source: TSR Socio-Economic Analysis). Total employment and non-employment income after taxes in the Vanderhoof F.D. and in Prince George TSA estimated at \$147 million and \$1,490 million, respectively, in 1993. (Source: Based on Ministry of Finance economic dependency analysis)

f) Based on employment multipliers of 1.65 - 2.02 for logging and 1.70 - 2.30 for processing (excl. pulp and paper). (Source: High multiplier based on Ministry of Finance BC Input-Output Model, low multiplier based on BCIOM adjusted for social safety net). Indirect and induced income impacts in the province based on average after tax W&S in these sectors of \$21,700/PY. (Source: TSR Socio-Economic Analysis)

g) Potential B.C. revenue impacts include: stumpage, royalties and rents ranging from \$15.78/m³ (without FRBC, average for calendar years 1990-94) to \$37.18/m³ (with FRBC, 1995); logging, corporate income and other taxes of \$1.60/m³-average for 1990-94); personal income tax revenue losses (based on average PIT rates, as proportion of cash benefits, of 29% for forestry and 20% for indirect sectors, and B.C. share of 33%). Federal revenue losses include federal share of CIT (\$1.17/m³) and 67% of PIT. Range of PIT estimates reflects low / high multiplier range. Revenue estimates exclude BC and federal revenues that do not vary with output, and other government costs that may be associated with land use changes (e.g. management costs and income support payments), as well as possible compensation costs for lost timber rights. Municipal revenue losses (\$1.99/m³) only if mill closure occurs. (Sources: MOF Valuation Branch and Price Waterhouse, with exception of indirect PIT rate from B.C. Economic Accounts.

h) Stumpage revenue impact per household, based on estimated 1.373 million households in BC in 1994. (Source: Statistics Canada). This indicator is a rough proxy of the opportunity cost of timber resources, i.e. the additional annual amount each household in BC would have to be willing to pay (in years 51-60 for Alternative 1 and years 26-35 for Alternative 2) to achieve the environmental and other non-timber benefits associated with the Base Case. There would be additional opportunity costs associated with further harvest declines to long term levels.

Forest Sector Implications at the Community and Provincial Level

Forestry-related economic implications of the Base Case at the provincial level are also summarized in Tables 2 and 3 for Alternatives 1 and 2, respectively. Impacts at the community level are difficult to predict because of uncertainties about wood flows and worker residence. Harvest impacts would likely be prorated among licensees according to their existing share of the District's total AAC apportionment. Since the current pattern of forest worker residence largely reflects the existing Licencee apportionments in the Forest District, it is likely that the employment impacts of the Base Case would be distributed similar to the current residence patterns. This suggests that at least half of the employment impacts of the Base Case would occur in the immediate Vanderhoof area, taking into account the surrounding rural area which is linked to the Vanderhoof economy. However, since about half of the total District workforce resides in Vanderhoof or the surrounding area, the potential Base Case employment impact as a percentage of Vanderhoof area employment would be about the same as for the District (i.e. 1.9%)

Alternative Adjustments To Forestry Impacts in the Base Case

The timber analysis indicates that Vanderhoof Forest District harvest impacts can be avoided for at least 25 years. However, shorter term disruptions could occur due to changes in the availability/cost of private/imported timber (on which local processors are highly reliant) and or industry rationalization. However, it should be stressed that in both the shorter term (i.e. less than 25 years) and longer term (i.e. greater than 25 years) any "adjustments" to timber shortfalls (due to reductions in private/imported timber or declining local harvest) could be achieved through attrition or take the form slightly lower average incomes as a result of periodic shutdowns, rather than workers losing their jobs entirely, or they could offset by accessing previously inoperable timber. With respect to the short term specifically, the accessing of reservoir salvage wood, more environmentally sensitive (e.g. selection) harvesting required by the Forest Practices Code, and Forest Renewal BC initiatives could offset possible employment impacts due to either fibre import reductions or industry rationalization.

2.2 Tourism and Recreation

The seven new protected areas proposed by RPAT, particularly those with road access and existing recreation use and facilities (e.g. Nechako Canyon and Finger-Tatuk Lakes), would likely attract and encourage longer stays in the region by tourists, and would protect opportunities for growth in sustainable recreation (e.g. camping and hiking) by residents. Over time, growth in tourism supported by visitors to new PAs could generate employment, but data is not available at this time to estimate this impact. The new PAs would support increased utilization, and may eventually stimulate additional investments in commercial backcountry tourism activities (e.g. resorts, lodges, guiding), although protected area management policies will likely place upper limits on the scale and nature of these investments and activities.

The Base Case would protect or place in Low Intensity / Visual Quality zones⁷ about 54% of outstanding recreation opportunities, 28% of opportunities requiring special management and about 55% and 43%, respectively of significant recreation features rated very high and high. About 70% of primitive recreation opportunities will be protected in the Base Case, and about 22% of semi-primitive opportunities (non-motorized) would be in protected areas or Low Intensity / VQO zones. Almost 50% of highly visually sensitive areas in the LRMP would be protected by VQOs and new PAs in the Base Case. Therefore, while there is significant protection in the Base Case, continued timber harvesting in the LRMP area will, in the longer term, erode some of the recreation values and scenic beauty valued by residents and visitors.

2.3 Mining and Energy

RPAT's proposed new protected areas would not affect any existing mines, but would preclude development of the promising Wolf gold-silver deposit in the Entiako PA. If determined to be feasible and this deposit could employ about 40-60 over a 5-10 year period. RPAT PAs would also preclude 5 other known metallic mineral occurrences, 7% of mineral tenures, 6% of high metallic mineral potential, and 7% of medium metallic potential. Another 12% of high and 8% of medium metallic potential would be included in

⁷ Those areas with Visual Quality Objectives (VQOs) are the only Low Intensity Management Zones in the Base Case.

Low Intensity / VQO zones where mining development would have to be sensitive to visual quality concerns and other environmental values.

RPAT PAs would not affect any existing or proposed industrial mineral mines, but would preclude about 3% and 12% of high and medium industrial potential, respectively.

The impact of the Base Case land use plan depends primarily on whether the Wolf deposit would be developed. New PAs may also cause some short term uncertainty and disruption of exploration activity and investor confidence.

BC Hydro has indicated that the Base Case land use plan does not affect any proposed hydro sites or Rights of Way.⁸

2.4 Agriculture

The new riparian areas established under the FPC (on both streams and lakes) would comprise about 9% of the Vanderhoof Forest District and could gradually over time prevent access for cattle grazing, however current grazing rights are grandfathered into the new protected areas. There is very little arable land in the proposed RPAT PAs, with minor exceptions in the Stuart River and even less in the Sutherland River areas. RPAT PAs would affect only about 0.2% of currently unutilized Crown ALR. Given the availability of under-utilized agricultural land and “Animal Unit Months” of forage in the District, it would appear that other opportunities for growth are available. For example, there appears to be approximately 3000-4000 acres of available arable land in favourably-zoned areas (i.e. Settlement/Agriculture and High Intensity) in the Nechako Valley area that could be allocated under B.C. Lands Agricultural Leases in the future, and about 20%-30% of total AUMs in the Vanderhoof Forest District remain uncommitted.⁹

While there could be relocation and development costs (e.g. fencing for riparian areas, new watering structures) of new range areas eventually, the Grazing Enhancement Fund, other Ministry of Agriculture assistance programs, and FRBC could assist in mitigating these costs.

There are concerns about potential conflicts regarding the liability on jointly held woodlot / range tenures for silvicultural damage by cattle, but these conflicts exist regardless of the land use plan per se.

2.5 Fisheries, Trapping, Guiding, Wildcraft

Although new PAs and the FPC Riparian Guidelines will better protect habitat for fisheries, fur-bearing / big game mammals and botanical forest products, about 83% of the Vanderhoof Forest District would be in High Intensity Zones. Therefore, the risk to salmon habitat will still increase over time as harvesting and road access in salmon-bearing watersheds proceeds. More and more of the freshwater lakes in the District would come under steadily increasing fishing pressure as a result of an expanding network of logging roads. Income from trapping would likely decline as old growth-dependent species (e.g.

⁸ Personal communication, BC Hydro.

⁹ "Vanderhoof LRMP Socio-Economic and Environmental Base Case", Resource Systems Management International Inc. & ECL Envirowest Consultants Ltd., March, 1995 and Vanderhoof Forest District staff.

marten) decline. Big game species such as moose and grizzly will also likely decline in the long term, as the land base in High Intensity Zones became increasingly fragmented. The potential for botanical forest products, particularly mushroom harvesting, would also likely decline with successive logging passes in High Intensity Zones, although explicit recognition of these values in resource management plans could preserve some of this potential.

3.0 Consensus Land Use Plan

3.1 Forestry

The impact of the Consensus Plan on timber supplies and on forestry jobs and income are virtually negligible above and beyond the Base Case.¹⁰ A net increase in Low Intensity Management Zones (less area in VQOs but more area in other types of low intensity designations) and General Management Zones, would still not require a timber harvest reduction any sooner than the 25 years indicated in the Base Case. Thereafter, harvest levels would decline by about the same 10% per decade until LRSY of about 1.3 million m³ is reached by year 56. Therefore, the Forest District, Prince George TSA, and provincial implications of the Consensus Plan would all be similar to those summarized in Table 2 for the Base Case.

The distribution of forestry impacts within the Forest District and the long term implications for the possible closure of one of the mills in the District would also be similar to the Base Case.

3.2 Tourism and Recreation

The Consensus Plan would place a larger proportion of areas with high recreation potential in protected areas or in Low Intensity / VQO Zones compared to the Base Case- about 91% of outstanding recreation opportunities, 30% of opportunities requiring special management, and 92% and 44%, respectively of significant recreation features rated very high and high. The Consensus Plan also places more of these values, particularly recreation opportunities requiring special management and significant features rated high, in General Management Zones.

The Consensus Plan would provide significantly greater protection for wilderness recreation opportunities. About 80% of primitive recreation opportunities and about 49% of semi-primitive opportunities (non-motorized) would be in protected areas or Low Intensity / VQO zones. An additional 20% of primitive and 4% of semi-primitive recreation opportunities would be placed in integrated management. About 43% of high visual sensitivity areas in the Vanderhoof Forest District are protected by VQOs, new Low Intensity zones and PAs in the Consensus Plan. This is somewhat lower than in the base case, because a smaller proportion of visually sensitive areas are placed in VQOs. However, an additional 9% of visually sensitive areas are placed in General Management and less in High Intensity zones (48% in the Consensus Plan versus 56% in the Base Case). The Consensus Plan's more stringent access provisions will also better preserve high

¹⁰ Note that the alternative harvest flow which initially constrains the District harvest at 1.7 million m³/yr. indicates that the step-down to LRSY would begin at year 45 in the Plan instead of year 50 in the Base case.

quality fishing opportunities on wilderness lakes which fishing guide / lodge operations rely upon to attract their clients.

Therefore, there is generally higher protection of recreation values in the Consensus Plan than in the Base Case, and overall, similar protection of visually sensitive areas. However, continued timber harvesting in the Vanderhoof Forest District in the longer term will still erode some of the recreation values and scenic beauty of the District.

The generally higher levels of protection in Consensus Plan for recreation values and features could, in the longer term, potentially generate higher employment in outdoor tourism than in the Base Case. Better protection of these values would encourage greater investment in commercial tourism ventures such as lodges and resorts, and encourage longer stays in the area. The protection of the South Francois Lake, which is readily accessible from Highway 16 and already drawing significant recreation use and related development, is particularly significant from tourism perspective. However, data are unavailable at this time to quantify these impacts.

3.3 Mining and Energy

No existing mines would be precluded by the Consensus Scenario. Although the Entiako PA would still include the Wolf deposit and Swan/Capoose claims, the management guidelines for the Entiako specify that exploration and development of these areas could continue, subject to existing environmental review mechanisms. The new protected areas in the Consensus Plan would preclude about 7% of high, and 6% of medium metallic mineral potential, roughly similar to the Base Case. Another 12% of high mineral potential and 10% of medium potential would be included in Low Intensity zones. This is a slight increase from the Base Case, but the impacts on actual mineral development are unlikely to be significant. Overall, the Consensus Plan could have a beneficial impact on mining activity, compared to the Base Case since further work on the promising Wolf deposit could continue. The actual impact would depend on whether the Wolf deposit and Swan/Capoose claims actually proceeded to the development stage.

3.4 Agriculture

The Consensus Plan would not have significant incremental impacts on agriculture compared to the Base Case. The Consensus Plan places the same small proportion, only 0.2%, of the ALR in new PAs (same as the Base Case) and reduces the proportion of ALR in Low Intensity zones, from about 9% to less than 2% in the Base Case. In addition, there is somewhat less identified arable land included in protected areas than in the Base Case, due to the reduction in size of RPAT's Stuart River proposal which made way for the creation/expansion in size of the Francois South protected area.

3.5 Fisheries, Trapping, Guiding and Wildcraft

Fish and game guiding, trapping and wildcraft will likely benefit somewhat from the reduction in the Consensus Plan of High Intensity Zones (from about 83% overall to less than 70%) and the increase in Low Intensity and General Management areas, compared to the base case. The Consensus Plan places a greater proportion of old growth (about 36% versus 20% in the Base Case) and undeveloped watersheds (about 97% versus 39% in the Base Case) in PAs, Low Intensity and Integrated Management. In addition, stricter controls

on access should reduce harvesting pressure on wilderness lakes and species such as grizzly which are vulnerable to fragmented habitat and human contact.

4.0 Community and Worker Adjustments, Mitigation / Transition Issues

The (longer term) employment implications estimated in this assessment are characterized as "jobs at risk" because of the uncertainties inherent in forecasting over a 25-50 year period and because estimates are based on the somewhat unrealistic assumption that firms and workers make no adjustments to minimize or avoid impacts. For example, firms might find alternative sawlog supplies, at least in the short term, or lower their labour costs through periodic shutdowns or attrition rather than lay-offs.

This is not to trivialize the difficult adjustments for individual workers (and their families) who are displaced and cannot find alternative employment, . There are a number of measures that could be implemented to mitigate the employment, income and government revenue impacts of industry rationalization and/or land use changes (or reductions in private/imported fibre supplies) in the shorter and longer terms, including greater use of underutilized timber supplies (e.g. previously inoperable, low productivity or deciduous stands), incremental silvicultural activities funded by FRBC, and more labour intensive harvesting and value-added processing. Phasing in timber harvest reductions as indicated by the timber supply analysis also allows time for transition measures, and the beneficial impacts of the Consensus Plan on tourism growth and the investment climate, to take effect.

It has been noted earlier that the timber analysis indicates that the timber impacts of both the Base Case and Consensus Plan can be avoided for at least 25 years. It therefore appears that there is ample time to prepare for potential harvest-related employment implications.¹¹ However, processing facilities in the Vanderhoof Forest District rely substantially (approximately 1 million m³ per year) on imported and private timber, the long term security of which is uncertain. The small pine resource upon which L & M Lumber depends also has a finite lifespan, estimated at about 20 years in the Prince George Timber Supply Review document. Therefore, existing processors may begin to experience wood supply shortages or cost increases in the near future even if the 1.7 million m³ Vanderhoof AAC apportionment is maintained.

In addition to uncertainty regarding existing, imported timber supplies, there are proposals for new processing facilities (a plywood veneer plant and a pulp mill) that would be partly supported by presently underutilized wood supplies (i.e. deciduous and reservoir log salvage), but which may eventually have to compete for existing supplies. Therefore, if these facilities proceed, an existing processing overcapacity situation would be exacerbated, locally, regionally and provincially. This issue should be considered in any current or future community planning initiatives. A transition strategy could be also developed that attempts to "match" workers displaced as a result of timber supply shortages or industry rationalization, with employment opportunities in new value-added facilities or other new projects.

¹¹ Harvest reductions would have to occur earlier in order to avoid decline in timber harvests below NDY. This would result in more immediate impacts on the local economy but would reduce the risk of mill closure in the longer term.

