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Southern Interior Mountain Pine Beetle Working Group

Preliminary Assessment Report

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NOTE TO READER

The opinions reported in this report are those expressed by either interview respondents or are the opinions or recommendations of the consulting team members.

They should NOT be viewed as the formal opinions or recommendations of the Southern Interior Communities MPB Working Group Committee.

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The report has been prepared under the leadership of Chris Ortner, Cirque Resources Associates Ltd., with contributions from Fred Baxter, Victor Cumming, Steve Nicol, and Randy Sunderman with editing and layout provided by Susan Thorne and Karol Hansma.

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1. REPORT INTRODUCTION

The Southern Interior Communities Mountain Pine Beetle Working Group (SIMPBWG) contracted an assessment of the potential impacts of the Mountain Pine Beetle (MPB) epidemic on Southern Interior communities as the first step in its application for provincial planning funds to prepare regional MPB mitigation strategies. Research from the BC Government, the Canadian Forest Service, and other public agencies has shown that the MPB has affected, to varying degrees, forest health, forest productivity, timber supply, and production activity throughout all areas of the province's Interior forest. The epidemic is now well past the stage of being an ecological issue—over the next 10 to 20 years it is expected to fundamentally alter the BC interior forest industry itself and the communities it supports.

The bulk of impacts associated with the MPB have so far occurred in the Cariboo and Omineca regions of the province, but the epidemic's incursion into the Southern Interior is now well advanced and is expected to continue into the future. The Mountain Pine Beetle Action Plan has identified timber recovery, community stability, forest restoration, and coordinated planning as the primary goals of the provincial effort to combat the MPB epidemic. For the Southern Interior, it is important these precepts are integrated into a comprehensive plan that coordinates research and lays out a path for future action that is aimed at building and diversifying the regional economy.

This report, combined with a face-to-face presentation of its findings, represents the completion of the first part of a two-part process. The second part will be the completion of a formal Proposal to the Provincial Government seeking the establishment and funding of a formal regional Beetle Action Coalition for the Southern Interior region of BC.

1.1. STUDY AREA

The study area in the Southern Interior of BC is a complex system of administrative units, totalling almost 30% of the Province of BC. The region covered by the SIMPBWG includes the entire Southern Interior from Princeton and Lillooet in the west to the top of the Thompson Nicola Regional District in the north and south and east to the US and Alberta borders. As shown on Map 1, the SIMPBWG covers a land area comprised of nine Regional Districts and the traditional territories of approximately six First Nations Tribal Councils.

The study area includes two provincial regional economic development regions. The Thompson-Okanagan Economic Development Region consists of five regional districts: North Okanagan (NORD), Central Okanagan (CORD), Okanagan-Similkameen (RDOS), Thompson-Nicola (TNRD), and Columbia Shuswap (CSRD). The Development Region covers 9,560,000 hectares, representing 10.8 percent of total provincial land area, and ranks fifth in size among the eight Development Regions. It has a total population of 513,500 (2006 estimate). Also in the study area is the Kootenay Boundary Economic Development Region, which consists of three regional districts including: Kootenay Boundary (RDKB), Central Kootenay (RDCK), and East Kootenay (EKRD). This region is made up of 5,950,000 hectares and represents 6.7 percent of the total land area of the province. It has a total population of 155,200 (2006 estimate). The SIMPBWG area also includes the District of Lillooet, and Areas A and D of the Squamish Lillooet Regional District.

Within the study area are traditional territories of the Secwepemc, Nlaka'pamux, Stl'atl'imc, Okanagan, and Ktunaxa Nations. Other Nations may have historical or continuing presence.

2. INTERVIEW RESULTS

2.1. INTRODUCTION AND RESEARCH PROCESS

The initial consultation process used in this study involved key informant interviews, via telephone, with individuals on the SIMPBWG and other individuals recommended by the working group. During the community consultation process serious effort was expended on contacting more than 38 individuals of which 31 completed a comprehensive set of questions and two others provided key auxiliary information.

Within the group of 31 who completed the questionnaire were representatives from all regional districts in the study area except the RDOS (the consulting team was unable to contact their representative) and NORD, which only very recently joined the Working Group and has not yet appointed a representative. The survey group also included representatives from six Tribal Councils and one other Tribal Council that indicated a willingness to complete the interview in the near future, as well as representatives from six key provincial organizations deeply involved with the MPB issue. Two woodlands managers with large licensees in the study area were interviewed. See Appendix 1 for a sample of the Questionnaire used and Appendix 2 for a complete list of those interviewed and contacted to be interviewed. This section of the report provides a summary of their answers to the questions posed in the telephone interviews which was conducted by three of the team members.

Note: No attempt has been made to examine, verify, or balance the views expressed by those interviewed by the consulting team.

2.2. CURRENT UNDERSTANDING

Forest companies clearly understand the current situation and are moving quickly to obtain a projected impact scenario based on the assumption that **ALL** pine will eventually be impacted. The situation is expected to be far more drastic in the Kamloops, Merritt, Princeton areas and on the west side of the Okanagan Timber Supply Area (TSA) where the pine is concentrated.

All provincial organizations have good general information on MPB but are lacking up-to-date information by sub-region and an estimate of the expected impacts e.g., forestry, Allowable Annual Cut (AAC).

SIMPBWG Committee members all have a solid understanding of the issues (that is why they were selected for this committee) and desire specific information on rate of spread, and potential impacts in areas which have not yet been affected heavily yet, e.g., Kootenay Boundary. There is major concern regarding impact on public parks (village, urban, regional, provincial and national), golf courses, and tourism destinations. General forest health and other potential or active epidemics are also an area of concern to Regional Districts and First Nations.

First Nation bands with natural resource staff have a good general regional understanding and a strong local understanding of the situation. Significant concerns have been expressed regarding potential ecosystem-wide impacts.

2.3. EDUCATION REQUIRED

Just seven out of the 31 people interviewed indicated that no more public education was needed. In some areas, the education process is systematically already underway—e.g., Thompson Nicola Regional District (TNRD)—and more public education is not seen as needed. Other areas where education is well underway, e.g., Central Okanagan Regional District (CORD), still see the need for more public education. Those interviewed from forest companies indicated that public education is needed so that the general citizen can know the difference between poor harvesting practices and MPB harvesting. Most who requested more education indicated that the magnitude of the MPB infestation and expected timing of salvage harvesting were not well understood given the current lower level of impact. Many interviewees felt that private landowners may not yet be aware of the magnitude of the issues they will likely face and communities may not fully understand the possible expected economic impacts.

2.4. INCREASES IN HARVESTING AND MILLING

In the Fraser Canyon, an increase in harvesting is not expected because of the high cost of harvesting the low-quality wood. Kamloops, Merritt, and Okanagan all have had uplifts in forest harvesting while the Central Kootenay (including Revelstoke) has had some minor increases. The Shuswap and Kootenay Boundary have not had uplifts in the AAC. The East Kootenay, including the North Columbia (e.g., Golden and Kinbasket Lake), does not expect increases in harvest levels, just a heavy focus on pine harvesting. Increased milling activities have followed the uplifts in the East Kootenay and there has been an increase in small-diameter milling.

2.5. FOREST INDUSTRY EVOLVEMENT

There is a general indication that the industry would currently be working at a slightly slower pace without the MPB infestation and that the value for pine and other substitute species would subsequently all be higher. Those mills that rely on species other than pine would have a better supply and prices would be slightly lower, on average e.g., interior cedar. Profit margins, all other things being equal, would also be higher. There would be better harvesting planning and more focused harvesting instead of harvesting in every valley at once. The view, expressed by a few, was that the Local Resource Management Plan (LRMP) objectives would be followed much more closely if there was not a mountain pine beetle epidemic.

Because of MPB, some local mills have cut less local wood over the last two or three years, substituting imported pine from the Cariboo and northern BC. Margins are lower and mills are consolidating to increase production and lower per-unit cost of production. The resulting consolidation has also limited the local log market and has encouraged smaller operators to look for export opportunities for round logs. There are fewer jobs per cubic meter as mills have increased capital investment and closed less productive operations. The pressure to use wood more efficiently with increased value-added is off, yet the pressure to make better use of the dead wood has increased. In some places in the Southern Interior there has been almost no change. Some First Nations expect the MPB will speed up the transition to more inclusion of First Nations in the forest industry as it has pressured the provincial government to deal with First Nations land and resource issues.

2.6. NEGATIVE IMPACTS – FORESTRY AND OUTSIDE FORESTRY

Some level of decline in the AAC in the Southern Interior is expected in the next 7–10 years (potentially even sooner) and this could translate into impacts on the economy in the western part of the Southern Interior, (i.e., mill closures expected in Merritt, Kamloops TSA) and in the Fraser and Thompson canyons areas. In the heavily impacted areas, partnerships with First Nations will be necessary to maintain timber through-put volumes. Reductions in available green timber supplies and AACs will probably translate into in the loss of harvesting and processing jobs. Logs that are available are expected to be transported to the most efficient mills in the region and a managed market for timber from private lands and small licensees is expected.

In the Central Kootenay area, the impact is expected to be much smaller, generating an outside demand for Kootenay wood, which will result in increased stumpage rates. In the East Kootenay, given that pine is mainly in the valley bottoms, logging will move up the hillsides, thereby increasing road building and harvesting costs. The expected rise in log prices and the lower volumes will create fibre pressure for those small mills that do not have their own tenures. Pulp mills that are accustomed to a diet of pine will need to shift to other species mixes to survive. The increase in the distance wood is trucked will also increase.

Outside forestry, interview respondents suggested that the MPB infestation is expected to have many other impacts:

- As salvage harvesting is completed in large cut blocks, particularly in backcountry and front country tourism areas, visual quality will be affected. These impacts will affect private tourism operations that depend on pine trees for visual quality and shade, e.g., campgrounds, riding, and hiking areas. One respondent indicated that their research has shown that there has already been a decrease in visitors in areas where the MPB impact has been the strongest.
- Roads are expected to deteriorate as they are not needed for harvesting, impacting access to cattle grazing, recreation areas (including hunting), and backcountry tenures.
- Noxious weeds are expected to increase in the harvested areas.
- Harvesting and natural stand depreciation is causing negative impacts on range infrastructure values such as fencing and natural barriers.
- Water runoff is expect to be higher during peak flows with more frequent freshets and lower “low” flows, which will affect irrigation, domestic water supplies, and all life that depends on historical water regimes, e.g. fish habitat. Less tree cover is expected to increase water temperatures and impact fish and other fauna and flora in marine ecosystems. Increased late summer and early fall droughts and faster snowmelts are expected. Increased runoffs, combined with few tree root systems to hold back the soil, will increase the potential for slides caused by increased runoffs. These issues will be most severe in community watersheds that are dominated by pine, e.g., Kimberley and Cranbrook.
- The decrease in mature trees will leave more standing water, which will contribute to increased mosquitoes.
- In the short term, there will be more grass for grazing yet there is concern that the dominant type of grass will be lower in nutrition and taste for cattle and ungulates, affecting both ranching and hunting. Barriers, both natural and man made (fences, bridges), will need adjusting to accommodate the physical shifts in grazing.
- Dead trees falling in parks and campsites will create safety problems.
- Those trying to enjoy backcountry recreation activities will often be thwarted by dead trees blocking trails and roads.

- Large visual clear cuts could seriously impact on the “supernatural” BC tourism brand and influence those who are drawn by the brand.
- Dead trees on Crown land and dead trees on private land could increase the fire threat particularly during the “red” stage and for few years after the tree has died.
- Urban neighbourhoods will lose trees.
- Local and regional parks will have to factor in new management costs.
- Ecosystem changes will impact non-timber forest products, including medicinal plants, and will require a revisit of compromises made during the LRMP processes.
- The loss of forestry jobs could decrease the number of people choosing to stay in rural areas, which will impact the availability of workers for seasonal jobs, such as those offered with tourism.

Many of these impacts are significant and will require substantial planning and action to minimize.

2.7. OPPORTUNITIES

Some suggested short-term *opportunities in forestry* as a result of the MPB epidemic are:

- Increased logging and milling in the short run.
- Chips for OSB, pulp, fuel pellets and directly into co-generation for electricity.
- New mills that are able to handle dryer wood including post and rail, finger jointing.
- Small mills with innovative products, including profiled log buildings.
- Silviculture, including growing the seedlings and diversifying the species grown and planted.
- Non-standard dimension products for overseas markets.
- Provide education to communities on the importance of forest health, and the need for diversity in the forest and in forest communities’ economies.
- Galvanize attention to real long term planning, including comprehensive stewardship activities.

Some suggested *opportunities outside forestry* as a result of the MPB epidemic are:

- More open spaces in the forest for snowmobiling and hunting and the components of the tourism industry that supports these activities.
- Increased water flows are expected to create the opportunity for additional water storage and potentially hydro electric power development.
- The forestry crisis will force partnerships between First Nations and non-native communities.
- A crisis may also get the attention of urban dwellers and thus improve the understanding of the rural situation.
- More grazing for cattle and ungulates and therefore delaying restocking may facilitate increased range use.
- Creation of demonstration forests for education focused on visitors to the region.
- Increased number of birds for bird watchers.

2.8. NON-FORESTRY VALUES EFFECTED

One area of major non-forestry concern is the potential change to seasonal water flow and quality. There could be damaging effects from increased peak flows (slides) and water shortages in low flow periods. Such water changes may create the need for additional water storage during peak flows. A general decline in forest sector jobs could cause a decrease the population in smaller rural communities, which will impact the provision of social services, including education (school closures). The loss of permanent higher paying jobs could encourage families to move, thereby removing the traditional part-time or seasonal workforce for much of the service and tourism industry.

Recreation, commercial recreation, and tourism impacts are expected as the visual quality of the landscape decreases even for those just motor touring. Viewscapes for residents will deteriorate. Parks will be impacted both in developed areas and in the backcountry. There are expected impacts on hunting and gathering activities and there is potential for catastrophic fire to damage soils, as well as plants, animals, and built infrastructure, including fencing. Ranching activities will also be affected as cattle loss will occur with abortions from ingesting pine needles and blowdown will impact cattle movement. Blowdown will also affect recreationalists. Changes in habitat will impact ungulates, berries, medicinal plants (ethno-botanicals), cultural values, spiritual values, and food for First Nations ceremonies. More access from increased logging will have an impact on hunting and fishing in those areas formerly accessed only by foot.

Management problems are also expected as the resource ministries struggle to keep up with the increased paperwork and site visits to manage the impact on the land. The combination of these impacts could negatively affect investment and re-investment levels in the rural areas of BC.

2.9. OTHER ORGANIZATIONS TO CONTACT

There are a variety of organizations that respondents indicated need to be contacted during the next planning phase of the Working Group's activities. Suggested groups have been categorized as follows:

- Key provincial ministry staff
- Outdoor clubs, including fish and game clubs
- Regional cattlemen's associations
- Watershed and environment groups that participated in the LRMPs and CORE processes
- Key forestry consultants and universities conducting research
- National parks
- MLAs and MPs
- Outfitting and guiding associations
- Community forests
- First Nations leaders, and those involved with ethno-botanicals, e.g., Janette Armstrong and Mary Thomas, Traditional Use Studies groups
- Interior Loggers Association
- Water purveyors

2.10. DISTRIBUTION OF FUNDS AND DELIVERY MODEL

During the interview process, respondents were asked to provide comments/opinions on what types of future government MPB financial assistance might be required and how this funding should be administered. The respondents have provided a mosaic of advice that shows their extensive experience with establishing and operating targeted program funds. Their advice has been grouped as follows:

Complimentary Links with other similar funds; create connections to avoid overlap:

- A linking system should be established with Southern Interior Development Initiative Trust, First Nations Leadership Council, Northern Development Initiative Trust, grazing enhancement funds, Columbia Basin Trust and the First Nations' MPB group (FN Forestry Council).
- Clubs and organizations need to be included, e.g., ski clubs, snowmobile clubs, riding clubs.
- Aboriginal rights and title should be recognized.
- Groups need to think strategically; not fight for local benefits!

Application Procedure

- Establish a clear set of guidelines with clear themes before funding is made available.
- Create a quick, low-capacity requirement, staged application process similar to Columbia Basin Trust.
- Keep the process simple and start ASAP given that the needs are immediate.
- Use a process that includes a letter of intent followed by a full proposal.

Funding Criteria

- Most heavily impacted communities and areas should get priority.
- Human health and safety needs to be first, e.g., domestic water, fire proofing.
- Communities with a higher dependence on forestry should get a higher priority.
- Job creation needs to be a priority.
- Focus on smaller communities and less on major communities given their more diversified economies.
- Support initiatives that will have long-term impacts.
- Support initiatives that create diversity within and outside of wood processing.
- Do not fund community infrastructure.
- Establish funds for sectors, e.g., tourism, agriculture, domestic and irrigation water, etc.
- Funding to be targeted at rectifying infrastructure damages that have already occurred because of the uplifts, e.g. fencing damage, loss of natural barriers and noxious weeds.
- Include focused research, particularly regarding mixed stands, in coordination with Cariboo-Chilcotin Beetle Action Coalition (CCBAC) and the Omineca Beetle Action Coalition (OBAC), two groups working to deal with the effects of the MPB on their communities.
- Include key tourism operations, e.g., public golf courses, ski areas, parks, Olympic training sites, horse trails, etc.
- Support innovation particularly from small business (e.g., 2–10 employees)
- Do not require matching funds.
- Process should be community driven, not top down.
- Allow forest companies to apply.
- First Nations communities will need funding, particularly with issues like water supply.

Management and Project Assessment, Monitoring, and Evaluation

- Contract with existing capacity, e.g., Community Futures Development Corporations for business plan review, City of Merritt for financial management, Ministry of Forests and Range staff in each District Office for forestry expertise, etc.
- Link with other economic project delivery agencies.
- Use existing administration systems where possible, e.g., regional districts
- Use forestry and guiding companies and others already on the land base for planning and surveillance.
- Use existing community non-government organizations (NGOs) for project development and implementation.

Organizational Structure

- Use a small committee with regional representatives (e.g., SIMPBWG) and with an equal number of representatives from First Nations groups and organizations who will meet twice a year face-to-face and have conference calls in between.
 - Use sub-committees where technical expertise or where a sub-regional focus (TSAs) is needed.
 - Have a small executive management team for most decisions.
 - Have a minimal number of staff (2 or 3).
- Involve the forestry, tourism, and agriculture sectors with the committee.
- Create a Memorandum of Understanding (MOU) with First Nations communities and the First Nation's MPB group.
- Review strengths and weaknesses of OBAC and CCBAC organizations.
- Establish a communication system ASAP.

2.11. INFORMATION – CAPTURE AND DISSEMINATE

Capture

Canvass existing organizations and assist with creating a single MPB Web site with CCBAC, OBAC, MOFR, CFS, COFI, etc. then advertise its location. Make the site self populating by key groups and link it to current regional district and municipal sites. Contract a single organization to be a clearing house (e.g., FORREX) with an annotation service. Fold in existing strategy information from First Nations and regional districts that already have developed plans. Obtain information from existing licensees that use the land base, e.g., forest companies, guiding operators, water purveyors, etc. In the information collected, include mitigation strategies that key communities are using.

Disseminate

Use a Web site, with a confidential section if required, and employ a communications strategy that includes a human to talk to. CCBAC's approach seems to be working so it should be reviewed. Link information through implementing organizations—e.g., economic development and regional district planning staff—using listservs, Web sites, and mailouts. Use local print, TV, and radio media to target specific issues, e.g., trees on private lands, interface fire issues. Hold community presentations in significantly affected or expected-to-be significantly affected areas. Have committee members give presentations using a “tool kit.” Contact specific operators by phone, e.g., affected guide outfitters, and then e-mail them key information. Make direct reports to regional districts and tribal councils. Contract the tribal Councils to get information out to First Nations groups. Pass print information directly through existing organizations, e.g., Chambers of Commerce. Deliver information to interest groups and encourage them to pass it along to their membership.

2.12. PRIORITY PLANNING ACTIVITIES RECOMMENDED BY INTERVIEW RESPONDENTS

The recommendations received from the interview respondents have been lumped into four key theme areas—general planning and estimating expected impact; forest investments: economic diversification—wood and non-wood; research.

General planning and estimating expected impacts

- Create plans and mitigation strategies on a sub-regional basis and specifically include the tourism and agriculture industries. With First Nations communities, use the plans that they have already prepared. Connect these strategies with labour market assessments.
- Coordinate activities with other agencies to avoid duplication of effort.
- Design and implement workforce transition plans and programs.
- Assess fire risk for settlement areas and reserves.
- Establish a program to channel funding for (business) planning and leveraging debt financing.
- Review the sector strategies prepared by CCBAC and learn from them.
- Prepare standard cost/benefit analysis models to use when evaluating potential investments.
- Implement mitigation strategies quickly.
- Use MPB epidemic as a driver for true First Nations co-management

Forested land base investments

- Plan to use other species during the expected falldown period.
- Investigate potential biological deterrents, e.g., sterile insect release programs.
- Invest in the forest via silviculture in the affected areas that would be carried out by individuals in the affected communities.
- Investigate other critical forest health issues and create stabilization plans, e.g., hemlock looper, and pine that is resistant to MPB.
- Stabilize the land and water run-off systems—debris, silting, slope stabilization.
- Conduct watershed research on post-MPB hydrology
- Implement innovative selective harvest strategies in mixed stands.
- Investigate cut and burn strategies.
- Investigate subsidized heli-logging to avoid new road construction.

Economic Diversification – Wood

- Establish a co-generation plant.
- Establish a dry log sort and US export program.
- Adjust policies so that forest companies can maximize the value from the dead pine.
- Do requests for proposals for new capital to use the dead wood.
- Connect needs (retirement housing) with use of dead and dry material.
- Focus a process on determining and investing in the best value-added wood businesses.
- Invest in people so they can effectively deal with the dry pine, with First Nations involvement

Economic Diversification – Non-wood

- Implement economic development (market research, business development and job creation) in non-wood industries first, e.g., agriculture, tourism.
- Assist key tourism attractions particularly those that are public and in high-use areas, e.g., parks
- Relocate and clear trails.
- Encourage First Nations cultural centres for tourism.
- Create education programs to inform visitors.
- Formulate a management plan for access control given the building of so many new roads for harvesting.

3. POTENTIAL FORESTRY IMPACTS

This section will begin with a high-level overview of predictable trends in the forest sector in BC based on provincial policy and global realities, regardless of the MPB or other forest health issues. The potential impact of the MPB on Southern Interior settlements is then discussed.

It must be recognized that predicting the timing of MPB effects by TSA is an ongoing science, with annual updates and continuous improvements in estimates. It will be important for the SIMPBWG to maintain up-to-date knowledge on these projections and maintain contact with qualified experts.

3.1. CHANGES IN THE BC FOREST INDUSTRY WITHOUT MPB

As this project is attempting to conduct a preliminary overview impact analysis of the MPB infestation on the forest industry and, subsequently on communities, it is useful to determine impacts that are occurring within the industry, but are related to provincial policy and global trends.

A number of existing sources were reviewed and the following comments are drawn from those sources.

In a feasibility report prepared for the Kamloops Indian Band, Gordon Murray referenced a report from the Forest Products Association of Canada, (2006) entitled, “Competition and Consolidation in Canada’s Forest Products Industry.” He noted that, “the British Columbia lumber industry operated in a highly competitive environment characterized by declining long term demand and prices, and increased market power of buyers.” He states, “Companies have addressed the competitive challenge by consolidating.” Consolidations have produced the following advantages:

- Increased efficiency from operational flexibility and lower per unit production costs
- Asset diversification, which reduces volatility of cash flow
- Product diversification
- Improved market access through geographical diversity
- Lower capital costs

The report noted that the many small- and medium-sized mills are being replaced by super mills. Those mills remaining survive by focusing on high value niche markets that demand a level of quality that the super mills are unable to provide.

In the Ministry of Forests and Range, Economics and Trade Branch report entitled, “Major Primary Timber Processing Facilities in BC (2005),” the following trends were noted for the Southern Interior between 1990 and 2005:

- The number of mills decreased from 88 to 71 -19%
- Total capacity in billion board foot per year increased from 10.7 to 12.9 +21%
- Total output in billion board feet per year increased from 10.0 to 14.3 +43%
- Total input in million cubic meters per year increased from 42.2 to 50.7 +20%
- Average capacity in million board feet/mill/year increased from 120 to 181 +50%
- Lumber recovery factor in 1,000 board feet/m³ increased from .236 to .252 +19%

In simple terms, the number of mills is decreasing, mill size is increasing, and mill efficiency is also increasing significantly. This results in lower per-unit costs and increased production per employee.

Veneer mills show similar trends although increases in efficiency are less.

Nelson, Niquidet, and Vertinsky in a presentation entitled, “Assessing the Impacts of Tenure Changes in BC,” in November, 2006 noted the following:

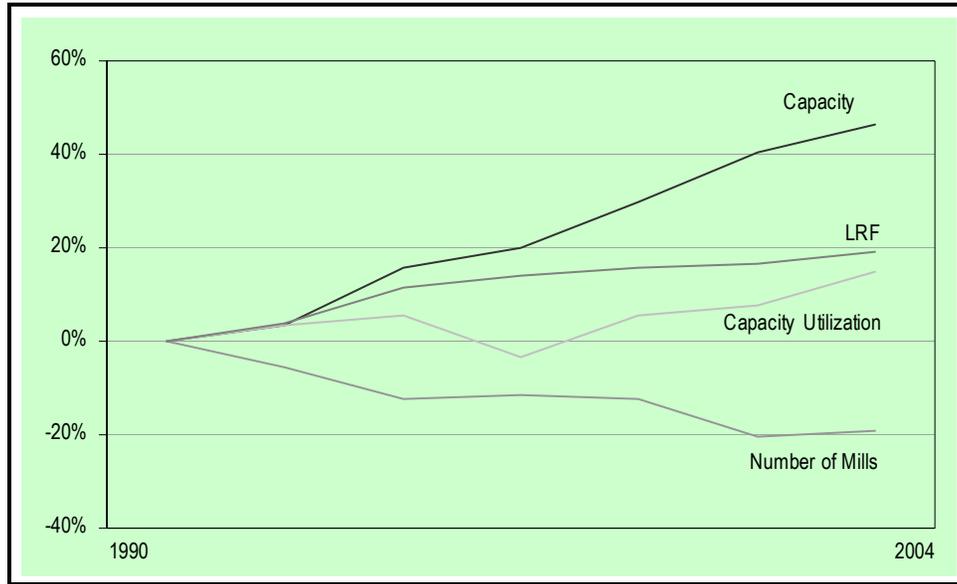
- The Forestry Revitalization Policy (FRP) changes enabled faster consolidation and the emergence of super mills. The most important enablers were dropping appurtenancy (connection of mill to tenure) and allowing tenure transferability and divisibility without the previously enforced 5% take back for reallocation.
- Rationalization within companies and consolidation through mergers and acquisitions meant gains in efficiency enhanced by closing inefficient plants.
- Consolidation is predicted to threaten outlying communities with small mills.
- Forest-dependent communities are experiencing significantly lower home value assessments compared to non forest-dependent communities.
- FRP changes allow firms to react faster in responding to competitive pressures.
- Firms will continue to seek lower unit costs with capital intensification and consolidation continuing resulting in less employment.
- Forestry can no longer be expected to serve as a major instrument of regional development.

Sawmill activity data for the Interior regions during the 15-year period ending in 2004 is presented in Figure 3-1. During this time, the number of wood processing facilities has declined. While capacity utilization fluctuates year to year in response to market conditions, overall utilization has been on an up-tick in recent years. Over time, the lumber recovery per cubic metre (LRF) in the interior is increasing.

The declining number of mills, increasing capacities, and increasing efficiencies are signs of a maturing industry and by themselves do not represent a threat to the manufacturing base. It is the financial, marketing, and competitive forces underlying this change that may be of more concern. The long-term future price of the industry’s most important products, lumber and pulp, is expected to be lower than the average historical price, implying a secular decline in real prices (Roberts, Lethbridge, Carreau 2005).

The arrival of low-cost competitors in the southern US, South America, and Asia, as well as a highly competitive European sawmill sector, pose challenges that the industry must address. The current cost and price squeeze leads to poor industry profits, low returns on capital, and a drag on capital investment. Between 1998 and 2003, BC ranked in the bottom half of world regions for return on capital employed, with BC pulp producers notably lagging because of the relatively small size and advanced age of their facilities [Roberts, Lethbridge, Carreau 2005]. As long as return on capital remains below the cost of capital, the industry will be discouraged from making new investment, a key ingredient to the industry’s future profitability.

Figure 3-1: Percent change in sawmill activities, Interior industry, 1990–2004.



Source: Ministry of Forests

The concentration of manufacturing capacity to gain economies of scale in commodity lumber production is a manifestation of profitability concerns by millers. The share of production now enjoyed by the top five lumber, panel, and pulp producers is the highest it has been in recent history as the number of large forest companies shrinks due to mergers and acquisitions. Driving the consolidation of manufacturing assets is the search for efficiencies and profits that can be attained without sacrificing market position. The primary response to industry’s current problems is to seek out new areas of cost advantage in existing markets rather than propose new business models, products, and markets. The easy entry, difficult exit nature of wood manufacturing, especially in smaller rural communities where the low opportunity cost of labour encourages government to support the ongoing operation of the industry’s more marginal facilities, has contributed to this problem.

Specific forest indicators for the Thompson Okanagan and Kootenay Boundary region are outlined in Table 3-1 and Table 3-2. Overall, forestry employment is up and the share of total employment has also increased from 1995 levels. This corresponds with a general increase in harvesting. On the sawmilling side, output is up while the number of mills has declined.

Table 3-1: Selected forestry indicators for the Thompson Okanagan Region

Harvest Levels	1995	2000	2005
Billed Volume (1000s cubic metres)	9,566	10,539	11,854
Percentage of Provincial Volume Billed	12.2%	13.4%	13.5%
Average Employed Forestry Labour Force*	'95-97	'99-01	'02-04
1000s Workers	13.4	16.7	16.3
% of All Workers	6.7%	8.0%	7.5%
Economic Dependency	Trendline	% Change	2001 Median
Change 1991-2001	↑	+ 6%	13%

Processing Facilities	1995		2005	
	Number	Output	Number	Output
Lumber Mill (more than 10 Mbd) (f)	28	2,130	25	2,353
Pulp Mills (1000s of tonnes)	1	426	1	466
Paper Mills (1000s of tonnes)	0	0	0	0
Veneer, Plywood, Panel and OSB (M sq. ft 3/8 basis)	9	1,564	10	2,167

Table 3-2: Selected forestry indicators for Kootenay Boundary Region

Harvest Levels	1995	2000	2005
Billed Volume (1000s cubic metres)	5,315	6,151	6,940
Percentage of Provincial Volume Billed	6.8%	7.8%	7.9%
Average Employed Forestry Labour Force*	'95-97	'99-01	'02-04
1000s Workers	5.1	4.9	6.3
% of All Workers	7.7%	7.0%	9.3%
Economic Dependency	Trendline	% Change	2001 Median
Change 1991-2001	↑	+ 3%	15%

Processing Facilities	1995		2005	
	Number	Output	Number	Output
Lumber Mill (more than 10 Mbd) (f)	16	1,320	15	1,514
Pulp Mills (1000s of tonnes)	2	628	2	681
Paper Mills (1000s of tonnes)	0	0	0	0
Veneer, Plywood, Panel and OSB (M sq. ft 3/8 basis)	2	220	2	402

It is reasonable to expect that these observed trends will be enhanced or speeded up with the continued uplifts in AAC to salvage stands throughout Southern Interior TSAs where pine is a significant component.

3.2. EXPECTED MPB IMPACT ON THE SOUTHERN INTERIOR

The project team was supplied with summary tables of BC Statistics information indicating communities, approximate percentage of pine by TSA, population, and forest sector labour force as well as percentage forest-income dependency.

It was also provided with a copy of the Council of Forest Industries (COFI) report on *Timber Supply Analysis: Mountain Pine Beetle Impact on Interior Timber Supply Areas*, prepared by Timberline Forest Industry Consultants Ltd. (March 2006)

Much has been written about the force of this MPB infestation, the elements that impact the predictive modelling of timber supply and the factors that will impact the mid-term falldown in timber supply. It is this falldown that will impact long-term log supply to manufacturing facilities and hence employment in local communities. The MOFR's Timber Supply Branch is in the process of completing a comprehensive analysis for TSAs that have a MPB impact, both current and predicted. That report is expected to be the authority, based on best information available, and is expected to be released during June 2007. This report will inform future planning and decisions of the SIMPBWG.

Another piece of key information will be Year 4 of the Provincial-Level Projection of the Current Mountain Pine Beetle Outbreak. This project had been ongoing for three years by a seven-member team of experts from the Province of BC, the Canadian Forest Service, and research consultants. This report, expected in April of 2007, estimates impacts with increasing accuracy, by drawing on Provincial Aerial Overviews of Forest Health. The April 2007 projection will include 2006 aerial overview data.

These reports will allow the SIMPBWG to use the best information to predict impacts on timber supply and therefore log supply to mills and resulting impacts over time on the labour force. They will assist in best estimates of both current and future impact of the MPB as well as timing of that impact within TSAs in the Southern Interior.

For example, best estimates in the year 2004 projected a MPB kill of 90 million m³ of mature pine in 2005. In fact, in 2005 it was found that 139 million m³ were actually killed. Also, current information indicates that the infestation will subside more rapidly than originally expected. The most current information is critical regarding the timing and extent of the MPB kill impact. Better information is obtained each year as more experience is gained on the behaviour of this infestation.

Broad estimated impacts and timing by TSA

Uncertainties exist with all estimates. The COFI report, for example, estimates 100 percent mortality in Pine, when experience has shown it is closer to 80%. This difference will show its importance in future timber supply being less impacted than previously predicted. Differences in the Southern Interior, compared to Northern BC and the Cariboo, also exist in stand and species diversity, and the geographic distribution of the pine. This may slow the spread of the MPB, or allow the forest industry to maintain a semblance of control over spread rates, by focusing harvesting on red- and green-attack trees. The Southern Interior is not at the height of its impact, which will occur one to three years from now. If the MPB spread and impact are as estimated based on northern experience, annual harvest uplifts will likely be necessary.

4. MPB SOCIO-ECONOMIC IMPACT – ESTIMATING

Estimating the expected socio-economic impact of the mountain pine epidemic on sub-regions and communities in the Southern Interior first requires accurate estimates of the expected spread and intensity of the epidemic by sub-region (TSA). As indicated in Section 3, this information is expected sometime in the next three months. Once the forest impacts are known then the relationship between local AAC and local employment in forestry and wood processing has to be ascertained on a community-by-community basis. Once the current situation is estimated, then a prediction needs to be made regarding the short-, medium-, and long-term impact that the expected changes in harvest will have on the local economy and on the social condition of each community.

This section of the report presents the current information that is available on the magnitude of employment in forestry and on wood processing on a community-by-community basis using the currently available, but unfortunately outdated, (2001 Census) information. This section also assesses the significance of the forest sector for each community (dependency) and provides information on the general diversity of their local economies. The results are the preliminary identification of the sub-regions and communities that are expected to be most highly impacted given the percentage of pine in their harvesting area, their dependency on forestry and wood processing employment, and the lack of economic diversity in general. The section concludes by presenting a preliminary description of the data gaps that need filling in the future to ensure a more accurate and reliable assessment of the economic impact of changes in the AAC on a sub-regional basis.

4.1. CURRENT INFORMATION & DATA

What we know – year and information

An important issue for this impact analysis is the obvious diversity, both in the forest land base and in the communities, of the study area. There are communities whose forest dependencies range from the very high to the very low, and where the MPB beetle may have impacts ranging from the significant to the negligible. Unlike the Omineca and Cariboo regions, where the forests and the communities are relatively homogeneous, it is not possible to group Southern Interior communities in a similar manner. Communities and regions are differentiated in terms of the scale of impacts and the extent of the associated mitigation strategies.

Socio-economic information on communities and sub-regions in the study area can be drawn from a wide variety of sources depending on the effects under study and the degree of detail being sought. This data is needed to establish the baseline, forecast a base case, and finally assess the effects of the MPB when compared to the baseline. However, until some causal linkages between the MPB and regional economies are identified with a reasonable degree of confidence, collecting socio-economic data will be somewhat speculative. An important first step in Phase 2 will be to meet with the Committee to decide where cause-effect linkages are likely to exist, the effects anticipated, and the indicators that will be used to measure those effects.

Statistical data describing the socio-economic baseline conditions in the Study Area that are already compiled (see Appendix 3) or readily retrievable include:

- 2001 census data (Statistics Canada);
- community economic dependency data (a derivative of 2001 labour force and other census information) and related indices (BC Stats);

- employment and income tables for economic base sectors (2001) for forest districts (BC Stats);
- mill survey data describing employment, production, and capacity trends (Ministry of Forests and Range);
- inter-census data on demographic variables (population, incomes) (BC Stats);
- government research studies on the impacts and effects of MPB, not only on timber supply and forest health, but also on regional economies; and
- indicators of resource activity other than forestry (BC Stats, Stats Canada, Tourism BC, other ministries)

4.2. COMMUNITIES WITH HIGHEST EXPECTED IMPACT

A set of preliminary information has been assembled on the region's communities. This information begins to build the data that will be required to determine the likely trend within the Regional Districts and communities and to assist with determining the potential impacts from the mountain pine beetle. The information outlined below includes: diversity index, forest dependencies, community labour characteristics, and dependencies.

Diversity Index and Forest Sector Dependency¹

Though a community with one dominant industry may be better off than one with a number of smaller ones, there is an intuitive appeal to having a diversified economic base that will provide more community stability in volatile economic times. To address this issue and quantify it for application in British Columbia, the local area economic dependencies were used to construct a diversity index. The index would be zero if the area were entirely dependent on one sector and 100 if a local area were equally dependent on each of the defined sectors.

Also, British Columbia is particularly dependent on the forest sector as a driver of local economies in many parts of the province. The forest vulnerability index was developed to illustrate the magnitude of vulnerability within a local area if a community should experience a downturn in the forest sector. The higher the forest vulnerability number, the more likely its economy will be vulnerable to a downturn in the forest sector.

Table 4-1 highlights the diversity index and forestry vulnerability index for the communities in the Thompson Okanagan. Table 4-2 outlines the diversity index and forestry vulnerability index for the communities in the Kootenay Boundary area.

Communities with diversities above 70 are considered diverse with communities like Ashcroft and Castlegar being among the most highly diversified in the province. Forest vulnerability ranges widely across the regions with low scores of 4 registered in the Central Okanagan Regional District, to a high of 32 in the Grand Forks area and Merritt. Overall, Grand Forks and Merritt are tied for 18th among the 64 local areas.

¹ Ministry of Management Services (2004). 2001 Economic Dependencies and Impact Ratios for 63 Local Areas.

Table 4-1: Diversity indices - Thompson Okanagan communities – Based on 2001 Census

Geography	Local Area	Diversity Index	Forest Vulnerability Index
Thompson Nicola RD			
Clinton	29	76	17
Cache Creek	29	76	17
Ashcroft	29	76	17
Lytton	29	76	17
Chase	31	72*	11*
Kamloops	31	72	11
Logan Lake	31	72*	11*
Merritt	30	68	32
Okanagan Similkameen RD			
Princeton	26	65	40
Keremeos	27	66	7
Oliver	27	66	7
Osoyoos	27	66	7
Penticton	28	68	6
Summerland	28	68	6
Central Okanagan RD			
Kelowna	34	73	4
Lake Country	34	73	4
Peachland	33	73	4
North Okanagan RD			
Armstrong	36	75	12
Enderby	36	75	12
Spallumcheen	36	75	12
Coldstream	35	72	10
Lumby	35	72*	10*
Vernon	35	72	10
Columbia Shuswap RD			
Sicamous	37	73*	11*
Salmon Arm	37	73	11
Revelstoke	39	73	23
Golden	38	72	28
Squamish-Lillooet RD			
Lillooet	25	67	28

Source: BC Stats (2004), 2001 Economic Dependencies and Impact Ratios for 63 Local Areas.

Note: Communities denoted by "*" indicates that the diversity index and forest vulnerability for these communities is reflective the regional economy as data is not available at the individual community level.

Table 4-2: Diversity indices - Kootenay Boundary communities – Based on 2001 Census

Geography	Local Area	Diversity Index	Forest Vulnerability Index
Central Kootenay RD			
Castlegar	43	74	31
Nakusp	43	74	31
Kaslo	44	69*	15*
Nelson	44	69	15
New Denver	44	69*	15*
Salmo	44	69*	15*
Silverton	44	69*	15*
Slocan	44	69*	15*
Creston	45	68	12
Kootenay Boundary RD			
Grand Forks	46	69	32
Greenwood	46	69*	32*
Midway	46	69*	32*
Fruitvale	47	66*	3*
Montrose	47	66	3
Rossland	47	66	3
Trail	47	66	3
Warfield	47	66	3
East Kootenay RD			
Elkford	40	61	12
Fernie	40	61	12
Sparwood	40	61	12
Cranbrook	41	74	14
Kimberley	41	74	14
Invermere	42	74	18
Radium Hot Springs	42	74*	18*

Source: BC Stats (2004), 2001 Economic Dependencies and Impact Ratios for 63 Local Areas.

Note: Communities denoted by “*” indicates that the diversity index and forest vulnerability for these communities is reflective the regional economy as data is not available at the individual community level.

Table 4-3 and Table 4-4 outline the community dependency for the study area in 2001 and 1991, the total and forestry labour force, and the local pine percentage in area forests.

Table 4-3: Dependency indices for Thompson Okanagan communities – Based on 2001 Census

Geography	2005 Pop	Total Labour Force	Logging/Forest Jobs	% of total Labour Force	2001 Dependency	1991 Dependency	% Pine THLB
Thompson Nicola							
Clinton	654	210	30	14.3%	18.0%	13.0%	53.0%
Cache Creek	1,134	455	30	6.6%	18.0%	13.0%	31.0%
Ashcroft	1,836	810	60	7.4%	18.0%	13.0%	31.0%
Lytton	334	175	20	11.4%	18.0%	13.0%	42.0%
Chase	2,568	950	170	17.9%	10.0%	10.0%	31.0%
Kamloops	82,714	41,565	2,195	5.3%	10.0%	10.0%	31.0%
Logan Lake	2,314	2,314	30	2.8%	10.0%	10.0%	31.0%
Merritt	7,561	7,561	625	18.6%	24.0%	19.0%	56.0%
Okanagan Similkameen							
Princeton	2,688	1,130	215	19.0%	28.0%	19.0%	56.0%
Keremeos	1,306	350	20	5.7%	6.0%	4.0%	35.0%
Oliver	4,379	1,560	60	3.8%	6.0%	4.0%	35.0%
Osoyoos	4,801	1,530	70	4.6%	6.0%	4.0%	35.0%
Penticton	33,061	13,910	550	4.0%	5.0%	4.0%	35.0%
Summerland	11,405	4,935	165	3.3%	5.0%	4.0%	35.0%
Central Okanagan							
Kelowna	109,490	48,920	1,230	2.5%	5.0%	4.0%	35.0%
Lake Country	10,367	4,985	160	3.2%	5.0%	4.0%	35.0%
Peachland	5,230	5,230	45	2.2%	5.0%	4.0%	35.0%
North Okanagan							
Armstrong	4,526	1,925	225	11.7%	15.0%	15.0%	35.0%
Enderby	3,073	4,875	1,000	7.0%	15.0%	15.0%	35.0%
Spallumcheen	5,707	1,000	2,870	8.0%	15.0%	15.0%	35.0%
Coldstream	10,102	650	4,875	23.1%	10.0%	10.0%	35.0%
Lumby	1,738	2,870	650	7.7%	10.0%	10.0%	35.0%
Vernon	36,232	15,720	15,720	5.2%	10.0%	10.0%	35.0%

Source: BC Stats (2004)

Table 4-4: Dependency indices for Thompson Okanagan communities – Based on 2001 Census

Geography	2005 Pop	Total Labour Force	Logging/Forest Jobs	% of total Labour Force	2001 Dependency	1991 Dependency	% Pine THLB
Columbia Shuswap							
Sicamous	3,043	1,230	135	11.0%	11.0%	12.0%	35.0%
Salmon Arm	16,800	7,520	440	5.9%	11.0%	12.0%	35.0%
Revelstoke	7,964	4,100	510	12.4%	21.0%	22.0%	17.0%
Golden	4,399	2,200	355	16.1%	25.0%	27.0%	17.0%
Squamish-Lillooet							
Lillooet	2,779	1,515	195	12.9%	20.0%	25.0%	
Central Kootenay							
Castlegar	7,821	3,530	490	13.9%	25.0%	25.0%	17.0%
Nakusp	1,779	820	155	18.9%	25.0%	25.0%	17.0%
Kaslo	1,075	495	80	16.2%	13.0%	11.0%	27.0%
Nelson	9,797	4,760	130	2.7%	13.0%	11.0%	27.0%
New Denver	549	230	25	10.9%	13.0%	11.0%	17.0%
Salmo	1,133	485	80	16.5%	13.0%	11.0%	17.0%
Silverton	230	130	25	19.2%	13.0%	11.0%	27.0%
Slocan	357	185	75	40.5%	13.0%	11.0%	17.0%
Creston	5,097	2,020	115	5.7%	10.0%	11.0%	27.0%
East Kootenay							
Elkford	2,670	1,370	25	1.8%	8.0%	7.0%	47.0%
Fernie	5,126	2,665	105	3.9%	8.0%	7.0%	47.0%
Sparwood	3,973	2,080	75	3.6%	8.0%	7.0%	47.0%
Cranbrook	19,774	9,270	810	8.7%	14.0%	13.0%	47.0%
Kimberley	7,049	3,250	200	6.2%	14.0%	13.0%	47.0%
Invermere	3,256	1,665	125	7.5%	18.0%	21.0%	40.0%
Radium Hot Springs	813	320	65	20.3%	18.0%	21.0%	40.0%
Kootenay-Boundary							
Fruitvale	2,083	970	50	5.2	4.0%	3.0%	27.0%
Roseland	3,725	2,070	55	2.7	4.0%	3.0%	17.0%
Trail	7,889	3,290	70	2.1	4.0%	3.0%	17.0%
Warfield	1,751	900	25	2.8	4.0%	3.0%	17.0%
Gr'd Forks	4,200	1,870	260	13.9	25.0%	23.0%	46.0%
Greenwood	668	280	80	28.6	25.0%	23.0%	46.0%
Midway	630	260	75	28.8	25.0%	23.0%	46.0%
Montrose	1,086	520	15	2.9	3.0%	3.0%	46.0%

Source: BC Stats (2004)

Preliminary Risk Ranking

Table 4-5 and Table 4-6 outline those local areas that are likely to be most at risk from impacts from the mountain pine beetle. Based on the forest vulnerability index and percentages of pine in the community's TSA, it is important that this information be viewed as preliminary. Other factors need to be considered and examined in the future work of the SIMPBWG.

Table 4-5: Preliminary community vulnerability ranking based on forestry activity only

Geography	Local Area	% Pine/THLB	Forest Vuln. Index
Most Impacted			
Princeton	26	56%	40
Merritt	30	56%	32
Grand Forks	46	46%	32
Greenwood	46	46%	32*
Midway	46	46%	32*
Lillooet	25	36%	28
Impacted			
Lytton	29	42%	17
Invermere	42	40%	18
Radium Hot Springs	42	40%	18
Cache Creek	29	31%	17
Ashcroft	29	31%	17
Kimberley	41	47%	14*
Cranbrook	41	47%	14
Sparwood	40	47%	12
Fernie	40	47%	12
Elkford	40	47%	12
Kaslo	44	27%	15*
Nelson	44	27%	15
Salmo	44	27%	15*
Silverton	44	27%	15*
Sicamous	37	35%	11*
Salmon Arm	37	35%	11
Enderby	36	35%	12
Armstrong	36	35%	12
Coldstream	36	35%	12
Spallumcheen	36	35%	12
Lumby	35	35%	10*
Golden	38	17%	28
Revelstoke	39	17%	23
Creston	45	27%	12
Chase	31	31%	11*
Kamloops	31	31%	11
Logan Lake	31	31%	11*
Slocan	44	17%	15*

Source: BC Stats (2004)

Note: Communities denoted by “*” indicates that the diversity index and forest vulnerability for these communities is reflective the regional economy as data is not available at the individual community level.

Table 4-6: Preliminary community vulnerability ranking based on forestry activity only

Geography	Local Area	% Pine in THLB	Forest Vulnerability Index
Least Impacted			
Keremeos	27	35%	7
Oliver	27	35%	7
Osoyoos	27	35%	7
Penticton	28	35%	6
Summerland	28	35%	6
Kelowna	34	35%	4
Lake Country	34	35%	4
Peachland	33	35%	4
Fruitvale	47	27%	3
Montrose	47	17%	3
Rossland	47	17%	3
Trail	47	17%	3
Warfield	47	17%	3

Source: BC Stats (2004)

4.3. PRELIMINARY VIEWS ON DATA GAPS

The purpose of Appendix 3 of this report is to outline steps for a recommended socio-economic impact assessment for Southern Interior communities. This exercise obviously entails gathering information at a different level and from a wide range of sources. The precise data needs, indicators, and sources will not be known until the initial work steps in this process are completed.

Based on our understanding of the existing situation, the most likely data gaps and challenges for the SIMPBWG in carrying out future work are as follows:

- Matching and aggregating data to relevant study areas:** Existing data is available at various levels of geography, which makes refinement for the purposes of comparison a particular challenge. For example, most timber supply data is available at the forest district level. However, we know from previous timber supply reviews and AAC determinations that there are considerable flows of timber between districts. These volumes have apparently heightened over the last five years as certain restrictive forest policies were relaxed and facilities began streamlining their inputs as a result of industry consolidation. We now have the situation where communities can have quite different levels of forest dependencies (and thus different exposure to MPB impacts) even within the same district. On the other hand, the vast majority of socio-economic information, including economic dependency data, is not available by forest district but by political geographies (i.e., municipalities and electoral areas). While the challenge here is certainly manageable, it will require careful planning to ensure special data requests to statistical agencies and ministries are both accurate and cost-effective.
- Linkages between forestry processing and post-beetle harvesting:** Although agencies such as the Canadian Forest Service have studied the implications of the MPB, the fact is that most research to date has focused on issues of forest health and timber supply, and very little on socio-economic effects. In particular, the future state of the timber processing sector in the province is practically unknown and has attracted very little attention. The transition in the

timber supply in terms of species mix and green/dead mix will change dramatically over a very short period of time and the suitability of older mills, and even some of the newer super mills, is far from clear. The fact that the BC processing sector does very little timber importing would appear to indicate they are highly exposed to changes in internal wood supply conditions. When assessing the implications of LRMPs, SRMPs and timber supply reviews, government policy is to analyze only those scenarios that have minor deviations from the baseline. That way, the relationship between timber supply and socio-economic variables, such as employment, is more likely to coincide with the linear effects presumed in impact assessment methodologies (e.g., losing 1,000 m³ of timber will result in the loss of one job, for any volume of harvest). We know from experience that major changes in timber supply will not lead to proportional changes in processing activity— in fact, it is possible that the processing base could collapse (as it has in Northwest BC, though for reasons other than MPB). For the Southern Interior, it would be invaluable to be able to look ahead and gain some idea about where the processing industry is headed and how the MPB is accelerating or perhaps offsetting other factors that are, or will be, driving industry change.

- **Linkages between non-forestry activity and MPB impacts:** Even less clear than the MPB-forestry impact linkage is the effects the beetle will have on other resource sectors. We know from the MPB Action Plan that diversification of other industries is a provincial priority, but there is very little information on how resource sectors that could use the Crown land base might benefit. We do know that there will be more Crown range available if it is to be managed as such, but the scale of this change would need to be quantified before opportunities and benefits for agriculture could be discussed. Similarly, tourism could be a beneficiary or a net loser (for example, where nature-based tourism features are damaged or compromised). The implications for non-timber forest production is also little understood.
- **Industry trend analysis:** While the impacts of the MPB are being measured against the baseline, implicit in any effects analysis is how the baseline might change in the absence of the beetle epidemic. This requires a close look at key economic base sectors so we have a good understanding of how they might appear in 10 to 15 years when the beetle impacts have begun to subside, and communities have entered a post-beetle development phase.
- **How comparable communities have fared:** Irrespective of the quantitative results coming out of any future socio-economic impact assessment, the single most important outcome of future work will be the relevancy and practicality of any mitigation and adjustment options that regions and communities might pursue to maintain or even expand their local economies. A close look at other jurisdictions that have experienced similar timber supply crises would provide invaluable input as to the most effective mechanisms and levers of change.

5. RECOMMENDATIONS TO THE SIMPBWG REGARDING FUTURE WORK BY THE COMMITTEE

We were asked to provide recommendations to the SIMPBWG regarding future research and work we feel needs to be completed based on this initial review of MPB issues and potential impacts. We have three major recommendations for the Committee in this regard:

1. We believe that it is imperative that the Committee undertake a process of wider consultations with stakeholders and the public in the Southern Interior.
2. We recommend that the Committee complete a more detailed MPB potential timber impact study for the Southern Interior region.
3. We recommend that the Committee complete a detailed MPB Socio-Economic Impact Assessment study for the Southern Interior region.

5.1. AN EXPANDED COMMUNITY CONSULTATION PROCESS

It is clear from this Assessment report that many stakeholders and general members of the public in the Southern Interior are concerned about the MPB epidemic and would like the opportunity to have input into the SIMPBWG. Therefore we recommend that the SIMPBWG design and complete a broader community consultation process to help inform its future work. Given the size and diversity of the Southern Interior region we feel it is important that the Committee give consideration to a variety of different methods to seek stakeholder and public input.

5.2. MPB TIMBER IMPACT STUDY

As noted earlier, by the end of June 2007, the Ministry of Forests & Range is expected to release a MPB mid-term timber supply analysis for the province. Once this information is available we recommend that the SIMPBWG undertake a more detailed forest sector and MPB impact study for the Southern Interior region. We feel such a study would provide valuable insights to the Committee for projecting future potential timber supply impacts and timing of issues. We feel it is important that this impact study not only examine potential mid-term timber supply reductions but also examines timber flow between Timber Supply Areas.

5.3. MPB SOCIO-ECONOMIC ASSESSMENT

Building on the findings of the MPB Timber Impact Study, we also recommend that the SIMPBWG complete a MPB socio-economic assessment for the Southern Interior. This socio-economic assessment would undertake a more detailed examination and analysis of the potential socio-economic impacts of the MPB epidemic on sub-regions and communities within the Southern Interior. This study would therefore provide a more definitive projection of which individual communities in the SIMPBWG region will probably experience socio-economic impacts as a result of the MPB epidemic. In essence this study would fill out the preliminary analysis discussed in section 4 of this report.

A proposal is presented in Appendix 3 of this report for a socio-economic and community impact assessment (SEA) for the Southern Interior region of BC (Thompson Okanagan and Kootenay development regions). Based on our experience we have provided an initial cost estimate of what we feel such a socio-economic study would cost to complete. Other SEAs for single TSAs have cost more than \$50,000 each.

Based on the research conducted during this assessment and previous work elsewhere, it is expected that the SIMPBWG will focus some of its efforts on the following topic areas upon receipt of additional funding:

1. Opportunities for value-added wood manufacturing in the Southern Interior
2. Bio-energy issues and opportunities related to mountain pine beetle fibre.
3. Operational needs for rehabilitation of mountain pine beetle-affected lands and watersheds.
4. First Nations economic development—new businesses and partnership strategies
5. Hydrologic effects relating to water quality, quantity, and timing of flow in mountain pine beetle-impacted areas
6. Diversification plans for critically impacted communities
7. Information management and communications plan for the SIMPBWG.
8. Emerging opportunities in the mineral sector and their expected economic impact
9. Agriculture sector—food, feed, fibre, and fuel for the future

Research will be required in each of the topic areas using substantial information that has already been prepared by other jurisdictions (e.g., CCBAC, OBAC, regional economic development strategies, regional sector development and investment attraction strategies), to prepare concise rationale (1–2 pages) summaries and terms of reference for these studies.

APPENDIX 1 – SAMPLE QUESTIONNAIRE

1 *Who is filling this out?

- Fred
- Chris
- Victor
- Other, please specify

2 *Date and time of interview

3 *Name and contact information of interviewee

RESPONSES

4 *Which geographic area(s) do you represent? (choose all that apply)

- Central Kootenay Regional District
- Central Okanagan Regional District
- Columbia Shuswap Regional District
- East Kootenay Regional District
- Kootenay Boundary Regional District
- North Okanagan Regional District
- Okanagan Similkameen Regional District
- Squamish Lilloeet Regional District
- Thompson Nicola Regional District
- Ktunaxa-Kinbasket Tribal Council
- Lilloeet Tribal Council
- Nlaka'pamux Nation Tribal Council
- Nicola Tribal Association
- Okanagan Nation Alliance
- Shuswap Tribal Council
- Other, please specify

5 *Approximately how many people are in your constituency?

6 *If the MPBWG wanted to contact your group, what is the right point and level of contact for your group? Please include specific organizations, organizational component (committee of the whole, or sub-committee, etc.) and individuals we should contact.

7 *What is your understanding of the status of the MPB epidemic in your area?

8 *Is education required for your constituency?

- Yes
- No

Additional Comment

9 *Is your area experiencing increases in harvesting activities related to MPB?

- Yes
- No

Please elaborate

10 *Is your area experiencing increases in milling activities related to MPB?

- Yes
- No

Please elaborate

11 *How would the forest industry evolve in your area in the absence of the MPB?

12 *Will there be forest sector impacts connected to MPB associated decline in harvest, in the future?

13 *Do you see negative impacts in your area as a result of MPB outside of the forest sector (tourism, agriculture, etc)?

- Yes
- No

Please elaborate

14 *Do you see opportunities in your area as a result of MPB INSIDE the forest sector (tourism, agriculture, etc)?

- Yes
- No

Please elaborate

15 *Do you see opportunities in your area as a result of MPB OUTSIDE of the forest sector (tourism, agriculture, etc)?

- Yes
- No

Please elaborate

16 *What other community values besides economic values will be affected by the MPB?

17 *Are there specific organizations or individuals we should be contacting regarding specific expected MPB impacts?

- Yes
- No

Who and how do we contact them?

18 *The provincial and federal governments have committed funds to other major regions with significant MPB impact in the Province and there is likelihood that similar types of resources maybe provided to the Southern Interior. How should those funds be distributed?

19 *What characteristics should a MPB fund delivery model have to serve the complex interests of the Southern Interior?

20 *How can we best capture known and evolving information on this initiative?

21 *How can we best DISTRIBUTE known and evolving information on this initiative?

22 *If funds were available for MPB impacts, where would you recommend they be invested?

23 *What do you see as the priority planning activities for the Southern MPB committee?

24 *Have we missed anything you think is critical to expected MPB impacts in your region?

25 (Additional questions asked or other information about interview)

APPENDIX 2 – LIST OF INDIVIDUALS INTERVIEWED

Organization	Name	Interviewed
Mayor of City of Merritt	David Laird	✓
Thompson-Nicola Regional District	Sally Watson	✓
	Herb Graham	✓
Regional District of East Kootenay	Rob Gay	✓
Columbia Shuswap Regional District	Rhona Martin	✓
Regional District Okanagan Similkameen	Randy McLean	✓
Regional District of Central Okanagan	Robert Hobson	✓
Regional District of Kootenay Boundary	Bill Baird	Conversation Only
SNTC	Keith Mathews	✓
	Aaron Higginbottom	✓
Okanagan Nation Alliance	Mickey Werstiuk	✓
	Gwen Bridge	✓
NTA	Lennard Joe	✓
CFDCCIFN	Geri Collins	✓
	Bill Vass	✓
Ktunaxa/Kinbasket Nation Council	Scott Blissett	Message Only
St'at'imc Tribal Council	Michelle Edwards	✓
Fraser Canyon Indian Administration		Messages Only
Nlaka'pamux Nation Tribal Council	Robert Pasco	Scheduled
Regional District of Central Kootenay	Mark Septav	✓
Squamish Lillooet Regional District	Christ'I Roshard	✓
BC Cattlemens Association	Bob France	✓
Steel Workers	Warren Oja	✓
COFI	Gary Crooks	✓
Tolko	Randy Chan	✓
MOFR	Jeff Stone	✓
	Lorraine McLaughlin	✓
Nature Conservancy	Pierre Lachetti	✓
COTA	Peter Larose	✓
Kootenay Tourism	Kathy Kooper	✓
Thompson Okanagan Tourism	Glenn Mandziuk	Messages Only
Tourism Kamloops	Lee Morris	✓
TEMBEC	Chris Stagg	✓
EDO Thompson Okanagan	Robert Fine	Messages Only
CAO Kootenay	John McLean	✓
KOA/Clearwater Valley Resort	Sheena Van Dyke	✓
North Okanagan Regional District	Brian Reardon	Messages Only
EDO Quesnel & Community EDC	Jim Savage	✓

APPENDIX 3 – SOCIO-ECONOMIC IMPACT METHODOLOGY

1. Client meeting #1

We will participate in an initial meeting in the study area with the Committee to confirm:

- The scope of effects assessment;
- The work plan;
- The baseline work completed to date (Appendix of this proposal);
- The study area(s), including how to aggregate communities into sub-regions that provide the best match for the available data;
- Confirm socio-economic indicators;
- Timing; and
- Final deliverables.

2. Report Outline.

Based on the results of the first set of meetings, we would prepare a detailed outline and submit it to the Committee for review and comment.

3. Data collection

A first cut of all indicators will be compiled using readily available statistics from Statistics Canada, BC Stats and other government information sources. Special data requests from Statistics Canada will be required.

4. Literature review

A review of studies and research will be conducted focusing on two aspects of MPB, timber supply and other land use impacts, and community adjustment and transition strategies. Specifically several key sectors will be investigated including:

- Research on timber supply will contribute to development of the forestry impact model (discussed below). Research from the Cariboo and Omineca beetle coalitions will provide some indication of the level of impacts that might be expected once the MPB has progressed further in the Southern Interior.
- Update data from existing provincial and socio-economic publications from the Ministry of Agriculture. This will include compiling data by Regional District from the 2001 Census and also include data on range tenures and Animal Unit Months currently allocated.
- Research into the implications of the provincial mining strategy in Mountain Pine Beetle areas and the potential opportunities these can create.
- Explore research on the implications for regional tourism and recreational activities.

Best practices and case analyses of community adjustment and transition strategies will help predict how communities and regions might respond to major reductions in timber supply, and identify potential mitigation strategies. The approach in both the Cariboo and Omineca was to treat the beetle as a long-term adjustment to both timber supply and economic base, then to propose general economic development remedies to help communities adjust to the phenomena. Whether this approach is proving effective, or

might be effective once implemented, could provide some valuable insight for the Southern Interior.

5. Prepare draft baseline

A baseline report that presents current and historical trend data on socio-economic indicators for the study area will be prepared. This will be primarily a statistical and research report.

6. Client meeting #2.

We would meet with the Committee in the study area to review the draft baseline.

7. Key informant interviews

Contact will be made with government, public and NGO service agencies responsible for specific information such as in forestry and tourism. These will be a combination of in-person and telephone interviews, as well as group meetings where required.

The number of interviews to be conducted would be discussed with the committee, as will the timing. Interviews would occur throughout the course of the project on all project components.

Based on the key informant interviews it may become necessary to do comprehensive interviews to define impacts with the backcountry tourism and forestry sector.

8. Industry survey

A survey of forest licensees and processing facilities will be required to feed different parts of the baseline analysis (e.g. employment, timber flows), effects assessment (potential mill threshold levels, capacity utilization, capital plans and upgrades) and mitigation measures.

9. Base case forest modelling

- Obtain and analyze aggregate harvest data at the forest district aggregate from the Ministry of Forest's Billed Volume database. Two time periods will be obtained including pre-pine beetle period (the period from 1997 to 2001) and pine beetle period (2001 to 2005). This data will provide insights to the harvest and the change in harvest by Forest District.
- The Allowable Annual Cut Apportionment by management unit (timber supply areas and tree farm licenses) will provide a current snapshot of the volume and distribution of Crown harvest quota among licensees.
- The Ministry of Forests, Economics and Trade Branch database of major primary timber processing facilities and their processing capacity will be referenced to link those holding Crown quota to the location and capacity of processing capacity. This is the linkage to ascribing community level impacts.
- An estimate of total primary log input will be developed to determine if the region is a net importer or exporter of logs. At this stage, the inter regional transfer of logs (e.g. harvest from Kootenay Lake milled in Kelowna) will be roughly approximated. In phase 2, industry interviews will greatly refine this element of the model.
- The Ministry of Forests, Economics and Trade Branch has documented the employment coefficients by labour component (ie., harvesting, silviculture, milling) from TSR 2. This data will be used to develop a labour force associated with each harvest volume. This employment will also be assigned to specific communities

within each Forest District to determine the base employment for the local forest sector.

- With these key data pieces in place a model will then be developed that allows for the manipulation of the harvest levels and the associated employment levels. This data base will then be used to determine the anticipated impacts associated with the initial uplift and the subsequent Mountain Pine Beetle harvest declines.

10. Forestry workshop

A forestry workshop would be conducted in the study area to review the baseline, research finding and the design of the timber supply model.

The Client would identify and invite participants, while the consulting team would facilitate the workshop. Two separate workshops may be required to ensure there is good participation and representation.

11. Prepare draft base case

Based on feedback from the forestry workshop, the timber supply model would be fine-tuned and then used to produce a produce future timber supply scenarios for the region and sub-regional areas.

12. Undertake impact assessment

In the base case, future timber supplies scenarios will be compared to the current situation as documented in the baseline report. The implications for the forest industry and the communities that have higher levels of forestry dependency will then be assessed. The implications for other resource industries that may be affected by changes to Crown land use and management resulting from the MPB will also be addressed. We would focus on communities that would be significantly impacted in comparison to the base case.

13. Community workshop

A community workshop will be held in the study area with Committee members and other local stakeholders to go over the draft base case and gather feedback on the results and the usefulness of the analyses. The workshop would be held in the study area, and as with the forest workshop, could be split into two separate sessions to accommodate as many stakeholders as possible.

14. Case analysis

We propose to prepare a case study of Washington and Oregon regions that went through severe supply shortages, mills closures, employment loss and community instability as a result of public land timber supply reductions in the 1980s and early 1990s. This occurred at a time when many mills were old, highly inefficient and amongst the highest cost producers in the world. Today, the Pacific Northwest sawmill industry is highly competitive, low cost and very profitable. We would expect there to be lessons to be learned for the Southern Interior on how this turnaround occurred.

15. Mitigation recommendations

A set of high level mitigation options will be discussed. The purpose of this section of the report is not to provide a detailed strategy but instead to give an indication of future research and planning priorities.

16. Prepare draft final report

The draft final report will incorporate all previous reports and also present a set of high level mitigation strategies.

17. Client meeting #3.

A final meeting with the Committee would review the draft report and gather feedback on expected changes and additions to the report.

Sample Budget – Socio-economic impact

Fees and Expenses	Total Days	Exp.
1. Client meeting #1	1.5	500
2. Report outline	1.5	
3. Data collection	3.0	750
4. Literature review	4.0	
5. Draft baseline	4.5	
6. Client meeting #2	1.5	500
7. Key informant interviews	6.5	
8. Industry survey	8.0	
9. Base case forest modelling	7.0	
10. Forestry workshop	3.0	
11. Draft base case	3.5	
12. Impact assessment	5.0	
13. Community workshop	3.0	1000
14. Case analysis	3.0	
15. Mitigation options	4.0	
16. Final Report	3.0	
17. Client Meeting # 3	1.5	500
18. Administration and Client Liaison	5.0	
	Consulting Days	68.5
	Per Diems ²	\$760
	Total Fees	51,820
Total Fees		51,820
Total Expenses		3,250
Total Fees & Expenses (not incl. GST)		\$55,070

²This is an average per diem rate. The expected per diem rates could range from \$650 to \$850 per day.