

***Comments on the Socio-Economic Sections  
of the draft AIR/EIS Guidelines  
for the proposed Raven Underground Coal Mine***

**Prepared for  
Alberni Environmental Coalition  
and  
Comox Valley CoalWatch Society**

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# 1 INTRODUCTION

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The author of this report has been contracted by the Alberni Environmental Coalition and Comox Valley CoalWatch to review and comment on Version 7 of the draft Assessment Information Requirements/Environmental Impact Statement Guidelines (dAIR/EISG) for the Raven Underground Coal Mine. We understand that considerable work has already been undertaken by the Technical Working Group, government agencies, and the proponent. The Alberni Environmental Coalition (AEC) and Comox Valley CoalWatch (CVCW) appreciate the opportunity to contribute to the process.

As members of the public that have serious reservations about the Raven mine and coal port, AEC and CVCW want to ensure that the proponent's Environmental Impact Statement (EIS) will address the socio-economic matters that concern us the most. Following is a summary of our key concerns:

1. We note that the Project's effect on sustainable development and the need for/purpose of the project are not actually assessed in the EA process. We suggest that they be assessed by developing Valued Components (VCs) that can then be part of the matrix for determining residual effects. These VCs would be determined based on existing community values and planning exercises already in place.
2. Although the dAIR/EISG addresses greenhouse gas (GHG) emissions and climate change in relationship to the project activities, it does not address the contribution of the project's production to GHGs and climate change. This is much too narrow and self-interested an approach. To deal with these issues, we propose changes to the dAIR/EISG.
3. The project's assessment of economic effects needs to incorporate information from all the other sectors evaluated in the EA, including lost opportunity costs, social costs and benefits, cultural costs and benefits, effects on other industries, and health care costs and benefits. Unfortunately, this is not the case in the current dAIR/EISG. We propose changes to incorporate these values into the economic cost-benefit analysis.
4. The dAIR/EISG does not provide a means to critically evaluate the costs and benefits of the project to BC, the region, or the local communities, as it relies heavily on GDP, which has no debit column. We propose a number of questions that might elicit more useful information; a kind of multiple accounts analysis.
5. It is deeply concerning that neither the Social Effects nor Health Effects analyses require the use of the World Health Organisation Determinants of Health, although this is widely regarded as best practice. We propose changes to the dAIR/EISG to enable the use of these determinants, including a gender analysis.
6. Although the current version of the dAIR/EISG makes reference to "design for closure," there is no assurance that the EIS will address some key components. We make recommendations to strengthen the dAIR/EISG.

7. The boundaries for socio-economic baseline and effects analysis are too limited. They do not include the possible impacts on the entire Alberni-Clayoquot Regional District from increased traffic and delays on Highway 4. According to figure 6.2-1, the LSA is restricted to the area from the mine site south to Fanny Bay and does not give LSA status to Highway 4 and Port Alberni.
8. Monitoring, follow-up, and adaptive management that can respond to failures and changes in expected outcomes are essential if the project is approved. We suggest changes in the dAIR/EISG to strengthen these components.
9. The tracking of public comment is also of serious concern. Generally, process is tracked, not the nature of public comments. Overwhelmingly, to date, public comment has opposed the mine in its entirety, but those comments have been recorded as “issues” or “concerns.” Members of the public want to be assured that their opposition to the mine is noted in the official record. **NO means NO**, and the record should reflect what participants said, even if the facilitators feel the comment is not appropriate or is irrelevant.

## **2 SUSTAINABLE DEVELOPMENT**

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### ***2.1 Federal legislation and references in dAIR/EIS Guidelines***

Sustainable development is a fundamental objective of the federal environmental assessment process. The Canadian government adopts the Brundtland Commission definition: *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*<sup>1</sup> According to Brundtland, the idea contains within it two key concepts: “the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations to the environment’s ability to meet present and future needs.”<sup>2</sup> The federal government commits itself to the Brundtland interpretation in a number of documents.<sup>3</sup>

The CEA Act 4(1b) sets out the requirements regarding sustainable development. “The purposes of the Act are...to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy.” On page 27 of version 7 of the dAIR, this purpose is affirmed. However, within the EA process itself, the contribution or detracting of the proposed project to sustainable development is not specifically addressed.

### ***2.2 Summary of values, vision, and planning in the Comox Valley and in the Alberni Valley***

Both Port Alberni/Alberni Valley and the Comox Valley have spent the last 15 years developing economic, social, and cultural plans leading to a vision of sustainability for their communities. Well over 100 studies and workshops have been undertaken, and hundreds of community members in both regions have participated. The consensus of the Port Alberni community can be found in the Vision 20/20 statement:

*The Alberni Valley is a vibrant waterfront community at the heart of the West Coast that is sustainable and environmentally responsible; is safe, caring, and healthy; has a robust and diverse economy; is welcoming, accessible, and attractive; and is actively creating its future.*

The Vision 20/20 statement is echoed in the City of Port Alberni Official Community Plan (2007), in the Waterfront Redevelopment Study (2007), Outlook 20/20, the Somass Estuary Plan (2008), the Port Alberni Community Action Assessment, the Rotary Club culture report (2009), the Island Coastal Trust, and the Clayoquot Socio-Economic Report (2009).

The consensus in the Comox Valley was reached after even more studies, consultations, and reports. The vision statement in the Comox Valley Regional Growth Strategy is:

*The Comox Valley will continue to evolve as a region of distinct, well-connected and well-designed urban and rural communities. As stewards of the environment, local governments, the K'ómoks First Nation, public agencies, residents, businesses, and community and non-governmental organisations will work collaboratively to conserve and enhance land, water, and energy resources, and ensure a vibrant local economy and productive working landscapes.*

Again, the vision statement is spelled out in detailed planning in documents such as the Comox Valley Regional Growth Strategy (2011), the Comox Valley Sustainability Strategy (2010), the Rural Comox Valley Official Community Plan (including the Courtenay River Estuary Management Plan, which is included in the Official Community Plan [OCP] annual review), the Comox Valley Economic Development Strategy (2005), the Community Tourism Plan (2008), and the Comox Valley Agri-Food Initiative (2008).

Likewise, the Denman Island Local Trust and the Hornby Island Trust have spent years creating a vision statement and official plans (2008). The Denman Trust vision statement includes this:

*We believe that Denman Island can become a model for sustainability and self-sufficiency. All Islanders share the privilege and responsibility for realizing this vision.*

### **2.3 Suggested changes to assessment information requirements for EIS**

As it stands, version 7.0 of the dAIR/EISG does not provide the tools to evaluate the fit of the proposed mine with the visions that these communities have for themselves, nor does it respect the community consensus that has emerged over long years of community consultations. This omission could be remedied by: 1) developing Valued Components (VCs) specifying whether or not the Raven project is in keeping with the documented visions of the local communities, and 2) developing VCs to evaluate the project's contribution/detraction to sustainable development, so desired by these communities.

These latter VCs would be determined based on existing community values, and planning and activities already in place. Valued Components for analysing the contribution/detraction of the Raven Coal Project to sustainable development could be based on the key issues identified in the community official plans, as follows:

For Port Alberni:

- Housing: housing, services, and businesses that improve the quality of life for seniors, and amenity housing with waterfront views;
- Local Economic Development: quality of shopping experience; and diversification of the local economy;
- Arts and Culture: enhanced arts and cultural events;
- Quality of Life: the quality and sense of place associated with South Port and the waterfront;
- Local Agriculture: support for local agricultural initiatives, promotion of food security;
- Fisheries: protection of fisheries sensitive zones; and
- Improved Environment and Human Health: reduction of harmful emissions and improved air quality

For the Comox Valley, the VCs could mirror the goals of the Regional Growth Strategy:

- Housing: Ensure a diversity of housing options to meet evolving demographics and needs;
- Ecosystems, Natural Areas, and Parks: Protect, steward, and enhance the natural environment and ecological connections and systems;
- Local Economic Development: Achieve a sustainable, resilient, and dynamic local economy that supports Comox Valley businesses and the region's entrepreneurial spirit;
- Transportation: Develop an accessible, efficient, and affordable multi-modal transportation network that connects Core Settlement Areas and designated Town Centres, and links the Comox Valley to neighbouring communities and regions;
- Infrastructure: Provide affordable, effective, and efficient services and infrastructure that conserves land, water, and energy resources;
- Food Systems: Support and enhance the agricultural and aquaculture sectors, and increase local food security;
- Public Health and Safety: Support a high quality of life through the protection and enhancement of community health, safety, and well-being; and
- Climate Change: Minimise regional greenhouse gas emissions and plan for adaptation.

Additionally, the VCs could mirror the pertinent sections of the Rural Comox Valley OCP, as, for example, in the sections identified below:

- Schedule A, Section B Land Use and Economy Objectives and Policies
- Schedule F, Item 5: Aquaculture and tourism will play a major role in the economic development of Area A
- Schedule F: Goal to protect Baynes Sound
- Schedule F: Shellfish industry recognized as being essential to the economic self-sufficiency of the area.

### 3 NEED FOR THE PROJECT

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Seven Questions for Sustainability, a 2002 Mines, Minerals, and Sustainable Development (MMSD) Project (an industry-driven analysis) states:

*If there is a fundamental question underneath all others, it is the question of whether society—or the world—‘needs’ any given project or operation. A significant debate has emerged regarding what would constitute a full needs assessment. The debate encompasses mining and minerals, but also covers all other interventions in the natural environment as well—dams, irrigation projects, highways, pipelines, and even urban expansion.*

*The question arises because of growing concern that current human activity is undermining the capacity of future generations to meet its needs. This concern is a central driver of the sustainability/sustainable development set of concepts and the issue is very simple: Why do something that is undermining the capacity of future generations?*

*In market economies, governments accept the proponent’s feasibility study along with their willingness to invest as a demonstration of need. If the proponent believes that a market exists for the product, need is established. For its part, the proponent will consider existing and projected demand and supply (as reflected in commodity price) and use that value to ascertain project/operation profitability.*

*Over the last several decades, a broad sense has emerged that such market-driven decision-making may not always lead to satisfactory results in terms of the resulting human and ecological implications... However, such a sense begs some fundamental questions, including: (1) How, in practice, should a needs assessment that improves on the current approach be undertaken? (2) Whose needs should drive the assessment? and (3) Who should be the judge? These are profound questions of public policy for which there are no simple or widely accepted answers.<sup>4</sup>*

#### 3.1 CEAA and references in dAIR/EISG

The CEAA Operational Policy Statement on “the Need for the Project” states:

*The ‘need for’ the project is defined as the problem or opportunity that the proposed project is intending to solve or satisfy. That is, ‘need for’ establishes the fundamental justification or rationale for the project. The ‘purpose of’ the project is defined as what is to be achieved by carrying out the project. Consideration of the purpose of the project is required in every comprehensive study, mediation, and assessment by a review panel. The consideration of the need for the project is strongly encouraged in these types of assessment. Responsible authorities are also encouraged to consider these factors in screenings, particularly for large or complex projects.<sup>5</sup>*

Section 2.2.1 of the dAIR/EIS Guidelines states that the need for the project is “defined as the problem or opportunity that the proposed Raven project is intending to solve or satisfy.” The “purpose of the project” is defined as what is to be achieved by carrying out the proposed Raven Project. “The need for and purpose of the project will be established from the perspective of the proponent.”

However, and notwithstanding what is stated in the dAIR/EIS Guidelines, the responsible Minister will have to determine if any significant environmental effects from the project are justified. That justification will be based on economic, social (including health), and cultural factors. Certainly, one of these will be the need for the project ***from the point of view of the affected communities***. Do the Alberni Valley and the Comox Valley need this project? Or are there already alternatives in place that provide the jobs, multiplier effects, and business stimulation that the mine proposes to address, and with less environmental cost?

### ***3.2 Current economic activity in Comox and Alberni Valleys***

A review of current economic activity in both the Alberni and Comox valleys indicates that the efforts of these communities to develop their respective visions for their local economies are fragile, but are succeeding.

In Port Alberni, agriculture, wild foods, tourism, the fishery (both fin and aquaculture), heritage and culture, the development of retirement and lifestyle housing options, research, and educational initiatives are significant supplements to value-added forestry.

In the Comox Valley, a Net Worth Analysis in 2005 showed that the Valley was a “net generator” of revenues. The value of processed and farmgate local agri-food products, including shellfish, was \$60.9 million a year, with many opportunities to expand. Tourism is a major service employer in the region, leading the Valley to rebrand itself as “The New Provence.”

Heritage arts and culture has a total economic impact of over \$76 million. Housing, particularly for seniors and lifestyle migrants, has been growing rapidly. These people provide substantial financial investment and volunteer contribution to the regions. Value-added forestry, the military, and the public service continue to be significant employers.

The dAIR/EIS Guidelines needs to provide the tools to assess if there is a need for the Raven Project in this setting, and ensure that those tools form part of the significance determination.

### ***3.3 Suggested changes to assessment information requirements for EIS***

In order to provide more than lip service to assessing the “need for the project,” we suggest that Section 6.1 include a description of current economic activity in affected regions (as described above) and that the following Valued Components (VCs) be added to the Economic Health VCs (Table 6.2-1, Sections 6.2.2.1, and 6.2.2.2).

- Food security
- Heritage, arts, and culture
- Country foods
- Tourism revenues
- Social Services
- Services provided by nature
- Local government finances

## 4 THE FULL COST OF COAL

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*Each stage of the lifecycle of coal—extraction, transport, processing, and combustion—generates a waste stream and carries multiple hazards for health and the environment. These costs are external to the coal industry and thus are often considered externalities. We estimate that the lifecycle effects of coal and the waste streams generated are costing the US public **a third to over one-half a trillion dollars annually**. Many of these externalities are, moreover, cumulative.*

*Epstein et al. 2011. Full cost accounting for the life cycle of coal. Annals of the New York Academy of Sciences.*

### 4.1 References in the dAIR/EIS Guidelines

Although the dAIR/EISG addresses greenhouse gas emissions and climate change in relationship to the project activities, it does not address the contribution of the project's production of coal to GHGs and climate change worldwide. References are: sections 5.2.1, 5.2.3.

### 4.2 BC government position on climate change

What the BC government says about climate change:

*Climate change is one of the greatest challenges of our generation, and your BC Government is taking decisive action and has established some of the most aggressive targets for greenhouse gas reductions anywhere, to sustain the quality of life we enjoy today for our children and our grandchildren tomorrow. British Columbia is committed to reducing greenhouse gas emissions by 33% from 2007 levels by 2020 and 80% by 2050....<sup>6</sup>*

If climate change is indeed of such concern, then the contribution of the coal mined by the Raven project to climate change and greenhouse gas emissions worldwide should be of as much or more concern than the GHGs created by the mine itself.

### 4.3 References to climate change in official community documents

Most of the official documents from Port Alberni, the Comox Valley, Denman Island, and the First Nations contain statements about concerns with climate change. As an example, the Denman Island Local Trust Official Plan Guiding Principles includes the following:

*Guiding Principle 3. To recognize that climate change threatens the future of this community, and to implement changes designed to mitigate the negative impacts of climate change, including greenhouse gas emission reduction, and to promote adaptation to these impacts.*

### 4.4 Recommendations for the dAIR/EIS Guidelines

We recommend that the Economic Health section (Section 6) and the Cumulative Impacts sections of the dAIR/EISG be amended to include an analysis of the full cost of the Raven project's produced coal based on the methodology employed by Epstein et al (2011)<sup>7</sup>, and including services provided by nature.

## **5 ASSESSMENT OF POTENTIAL ECONOMIC EFFECTS (SECTION 6)**

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There are a number of problems with the tools suggested for the assessment of economic health and potential economic effects: reliance on Gross Domestic Product, a need for independent analysis of the economic viability of the Raven project, and a general failure to assign economic value to the lost opportunities, social costs, and environmental impacts that the mine will occasion.

### **5.1 *Gross Domestic Product. (6.2.2.2 and page 153)***

Gross Domestic Product (GDP) was a system of accounting created by the Americans and the British during World War II to quantify the monetary value of work during the war effort. The GDP became the foundation of the United Nations' System of National Accounts: the way work throughout the world is evaluated. However, the GDP has no debit column, so that such events as wars, the BP oil spill, and the meltdown of the Fukushima reactor, for example, are shown only as contributing to the GDP (Waring 1988, 1995; Daly 1994; Costanza 1997; Boulding 1985).

In the GDP, most cultural and caring activities, subsistence fisheries, and farming have no value. Neither do services provided by the environment, such as: water, waste disposal, provision of oxygen, and so on. In 1997, Costanza valued worldwide ecosystem services at \$33 trillion (more than twice the value of world GDP)<sup>8</sup>. For the purposes of evaluating an environmentally and culturally destructive project like a mine, the GDP is a useless measure.

We recommend that GDP only be used to assess the potential direct, indirect, and induced economic impacts of the mine on the BC economy if it is balanced by an accounting for the natural and social capital costs of the project, and the loss of GDP to other sectors and regions caused by the mine and its product.

### **5.2 *Analysis of the economic benefits from the mine***

The proponent issued a feasibility study on May 9, 2011. So far, it has not been made available to the public, and it should be.

The following must be included in the assessment of any potential economic benefits from the mine:

- The nature and extent of subsidies to the mine from federal, provincial, regional, and municipal governments, including access to water for production, reduced port fees, tax incentives and allowances, infrastructure support, training and education, costs for environmental assessment, permitting and monitoring, reduced reclamation bonds, marketing assistance, and road upgrades and maintenance;
- Costs of hydro power for the mine;
- An analysis of how many employees of the mine will actually be unemployed at the time of hire;
- An analysis of actual revenues expected from the Mining Lands Tax and from corporate income taxes over the mine life (based on marginal effective tax rate, not statutory rates), analysis of the effects of accelerated Capital Cost Allowances, and Exploration and Development Tax pools on the taxes to be paid;

- Analysis of the lost opportunity costs for resource users and of the loss of country foods to First Nations, including an analysis of the economic impacts of the potential destruction of the Baynes Sound shellfish industry;
- Analysis of the “skimming effect,” what happens when local businesses shift their focus to supplying the mine from their current focuses; what will happen to their current customers? Where will these businesses get credit to shift their focus? What happens to them when the construction period ends? When the mine closes either during a bust or at the end of its life? What will happen when their workers go to work at the mine?
- Analysis of increased costs to federal, provincial, and municipal governments for increased social and health services, including emergency response to potential accidents at the mine site, port, and on Highways 4 and 19.
- Analysis of costs to mine workers / port workers and their families, including job uncertainty, potential health costs (for diseases like black lung), effects of commodity price fluctuations on employment, impacts of long and dangerous drives to the workplace, shift work.

In the absence of access to the feasibility study, the following questions need also to be asked:

*Does the cost analysis include:*

- environmental, archaeological, and ecological considerations—other than those incorporated in the current design;
- costs for acquisition of rights-of-way;
- the cost of producing any environmental impact statement and obtaining environmental permits and approvals from local or national authorities;
- financing charges and interest during construction;
- currency exchange fluctuations
- all costs associated with weather interruption of construction operations; construction reclamation costs;
- First Nations compensation, or possible Impact Benefit Agreements payouts.

### ***5.3 A comprehensive cost-benefit analysis of the mine’s effects on sustainable development***

We suggest that the only way to seriously analyse the contribution of the mine to sustainable development is to undertake a thorough analysis showing the possible benefits and costs for comparable study areas. Although some of this data will have to be presented qualitatively, it should be given equal weight to currency-based information.

A solid cost-benefit analysis of the mine for the purpose of assessment of effects on sustainable development and “justifiability” would include:

- natural capital costs (the free provision of services by nature), such as the provision of water for the project at no cost, the use of land for the disposal of wastes, etc.
- analysis of CCC’s economic benefits (see 5.2 above)
- greenhouse gas emissions not only from the project but as a result of mine’s product (see 4 above)

- impacts on existing economic activities (see 3.2, 5.2 above)
- the potential loss of country foods, and loss of and damage to Aboriginal culture
- costs to municipal and other governments for increased road maintenance, increased infrastructure, etc. (see 5.2 above)
- analysis of the costs to the public of providing increased social services and health care programs, and of dealing with potentially increased violence. What will happen to the increased services in the event of closure? (see 6.1 and 6.2 below)
- gender analysis of the mine’s likely impacts, as a proxy for vulnerable populations other than First Nations (see 6.1 below)
- analysis of the potential negative impacts of heightened income disparity, such as housing crises and addictions (6.1 below)
- analysis of the consequences of the loss of mine incomes and contracts at closure, or in the event of economically induced shut-downs.

## **6 SOCIAL EFFECTS ANALYSIS (SECTION 7) AND HEALTH EFFECTS ANALYSIS (SECTION 8)**

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*Just as a natural ecosystem system can be damaged or destroyed, social systems can also be damaged or destroyed if key components are undermined or removed. It is very important to know, through research, where the thresholds lie and what the consequences of crossing them might be ...In cases where the impacts are as yet uncertain or unknown, the precautionary principle must apply...It may be possible for a community to survive, redefine itself and recover if a threshold is crossed. However, if, as in the case of the Innu of Labrador, thresholds are crossed again and again, recovery may no longer be possible.<sup>9</sup>*

These two sections—Social and Health—which should provide the tools to assess potential social and health effects—are very undeveloped compared to the other sections of the dAIR/EISG. In particular, we note that World Health Organisation’s Determinants of Health<sup>10</sup> are not recommended for the assessment, although they are widely recognised as best practice in the field. Nor do the VCs suggested reflect the Health Canada guidance on Health Impact Assessment<sup>11</sup>

A 2006 forum and a subsequent publication for the Mackenzie Valley Impact Review Board (MVEIRB), Issues and Recommendations for Social Impact Assessment in the Mackenzie Valley, is currently recognised as “State of the Art” in Socio-Economic Impact Assessment (SEIA), when it comes to large resource development projects.<sup>12</sup> Another important resource that sets out the generally accepted methodology for a Social Impact Analysis is The Canadian Handbook on Health Impact Assessment, Chapter 3: Social Impact Assessment in Environmental Impact Assessment Protocols: A Social Science Perspective<sup>13</sup>, published by Health Canada. The third volume of this Handbook expands on important elements with respect to determinants of health, health indicators, Aboriginal health and traditional knowledge, risk perception, and greater public consideration and community action.

If one uses the WHO Determinants of Health to establish the baseline profile and the effects analysis, then two key questions have to be considered:

- How do the environmental effects of the project contribute to the inequitable distribution of power, money, and resources?
- How does the project affect the quality of daily life, who benefits, and who pays the costs?

As a result of this oversight, the dAIR/EISG is likely to result in a very simplified assessment of the population affected by the mine, and no analysis of the contribution the project will make to equity and social justice. The mine is likely to worsen social and economic problems for vulnerable populations, especially women and Aboriginal peoples. It is pretty clear that, at least for the first few years, low-income renters in the region will be faced with a vacancy rate of less than zero, escalating rents, and over-crowding. Most of these will be single-parent women and Aboriginal people, but the pressure will extend to low wage-earners across the region. Gender analysis has become a key part of most recent environmental assessments for resource extraction projects (Diavik, Mackenzie Valley, Voisey's Bay, and others). The need for specific gender analysis for the Raven mine can be seen in the great discrepancy between the incomes and earnings of women and men in the regions. In 2006, median income for men in Port Alberni was \$33,247 and \$16,685 for women; in Comox Valley it was \$32,864 for men and \$18,162 for women.<sup>14</sup>

### **6.1 Recommendations for social conditions analysis**

We therefore recommend that the dAIR/EIS guidelines be amended to include:

- An analysis of social values in the regions affected by the mine and port;
- An analysis of volunteerism in the regions;
- A gender analysis: analysis of the baseline conditions for women, of possible cumulative effects on gender balance and relations, and the mitigation measures to address these effects;
- Analysis of the many organizations that make up community, social, and public health services for regional residents: of the agencies' fragility and strengths, who they serve and don't serve, where their funding and staff come from, and of their capacity to adapt, for example: the capacity and resiliency of day care and youth services, family violence programs, women's services, and drug and alcohol programs, or mental health programs;
- Analysis of the potential impacts of heightened income disparity in the regions;
- Analysis of shifts in the distribution of political and economic power created by the project;
- Analysis of the consequences of the loss of mine incomes and contracts post-closure, or in the event of an economically induced shut-down.

### **6.2 Health Risk Assessment**

The dAIR/EISG proposes a Human Health Risk Assessment based on chemical toxicity of country foods. There is no analysis proposed for the other aspects of health. The dAIR/EISG should set out the aspects of human health that are defined by the World Health Organisation, and include consideration of physical health and well-being; and associated emotional, social, cultural, and economic aspects. The EIS must provide information on population health of the communities in

the regional study areas. A description of community and public health services available to the residents of communities and to Aboriginal people in the regional study areas must also be included.

The Health Risk Analysis model itself is fraught with unidentified assumptions. Risk assessments of toxins are mathematical exercises, based on well over one hundred different assumptions. A change in any one of these assumptions can have a dramatic effect on the risk estimate. The modelling must be “ground-truthed” with testing of human or animal tissue to see if the modelling makes sense in the real world.

Aboriginal and community consultation is essential to the proponent in developing the risk assessment in order to ensure that key information is not missing.

## **7 DESIGNING FOR CLOSURE**

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When a major mine closes, the mine/mill infrastructure and the other over-sized buildings become a liability instead of an asset in the face of lost revenues from taxes. The regional governments and close-by communities are faced with a loss of population and revenue from taxes, and the costs of providing services either remain the same as they were during the mine life or actually increase. Closure has social, health, and economic impacts that are not addressed in the dAIR/EISG.

Peter Peck, author of an important report called Mining for Closure, published by the United Nations Environment Program in 2005,<sup>15</sup> defines this concept as: *integrated mine planning where a mine closure plan should be an integral part of a project life cycle and be designed to ensure that:*

- *Future public health and safety are not compromised;*
- *Environmental and resources are not subject to physical and chemical deterioration;*
- *The after-use of the site is beneficial and sustainable in the long term;*
- *Any adverse socio-economic impacts are minimized;*
- *And all socio-economic benefits are maximized.*<sup>16</sup>

The Elliot Lake Tracking Study, the most extensive of its kind, found that

*The efforts at finding new directions that did occur were often beset by political division and a lack of openness and community solidarity... In boom times at Elliot Lake, the dominant values fitted easily with an increasingly high level of consumerism and an individualization of social and environmental problems. But with the mass layoffs of the 1990s and the acute crisis facing Elliot Lake's development, it became increasingly apparent that neither these dominant economic and social values nor the legacy of top-down, company-town democracy could hold the community together under stress (Leadbeater, 1998).<sup>17</sup>*

We recommend that the dAIR/EISG require the closure and post-closure planning questions in the dAIR/EISG address these socio-economic issues.

## **8 BOUNDARIES**

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The boundaries for socio-economic baseline and effects analysis are too limited. They do not include the possible impacts on the entire Alberni-Clayoquot Regional District from increased traffic and delays on Highway 4. According to figure 6.2-1, the LSA is restricted to the area from the mine site south to Fanny Bay and does not give LSA status to either Highway 4 and Port Alberni. The RSAs are determined on the basis of possible mine and port benefits, such as jobs, and not on the basis of potential negative effects (7.2.1.1).

## **9 MONITORING AND FOLLOW-UP**

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The monitoring and follow-up program must be a participatory, inclusive, and transparent process that involves the First Nations and vulnerable populations in all the local communities. This plan should be spelled out at the EA stage, as required in the CEAA Operational Policy Statement.<sup>18</sup>

The nature of Aboriginal and stakeholder engagement in the monitoring program should be spelled out in the EIS.

## **10 TRACKING PUBLIC COMMENTS**

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Described on pages 36-38 of the dAIR/EISG, the process of tracking public comments is of concern to residents of the region. Although a record is kept of “concerns” and “issues” raised by the public, the record does not reflect the overwhelming opposition to the mine and proposed coal export port facility. The public wants to be assured that their opposition to the mine is noted in the official record. NO means NO, and the record should reflect what participants said, even if the facilitators feel the comment is not appropriate or is irrelevant.

## Endnotes

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<sup>1</sup> Our Common Future, Report of the World Commission on Environment and Development, World Commission on Environment and Development, 1987. Published as Annex to General Assembly document A/42/427, Development and International Co-operation: Environment August 2, 1987.

<sup>2</sup> *ibid.*

<sup>3</sup> Environment Canada. Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada. Sustainable Development Office. October 2010. <http://ec.gc.ca/dd-sd/default.asp?lang=En&n=F93CD795-1>

<sup>4</sup> MMSD North America. Seven Steps to Sustainability, Page 22.

<sup>5</sup> CEAA. Operational Policy Statement. Addressing "Need for", "Purpose of", "Alternatives to" and "Alternative Means" under the Canadian Environmental Assessment Act. Original: October 1998, Update: November 2007. <http://www.ceaa.gc.ca/default.asp?lang=En&n=5C072E13-1>

<sup>6</sup> [http://www.gov.bc.ca/yourbc/climate\\_change/cp\\_planet.html?src=/planet/cp\\_planet.html](http://www.gov.bc.ca/yourbc/climate_change/cp_planet.html?src=/planet/cp_planet.html)

<sup>7</sup> Epstein, Paul R., Jonathan Uonocore, Kevin Erkerle, Michael Hendryx, Benjamin M. Stout, Richard Heinberg, Richard w. Clapp, Beverly May, Nancy L. Reinhart, Melissa M. Ahern, Samir K. Doshi, and Leslie Glustrom. Full Cost Accounting for the Life Cycle of Coal. Annals of the New York Academy of Sciences: 1219 (2011)73-98.

<sup>8</sup> Costanza, Robert, Ralph d'Arge, Rudolf de Groot, Stephen Farberk, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V. O'Neill, Jose Paruelo, Robert G. Raskin, Paul Sutton, & Marjan van den Belt. The value of the world's ecosystem services and natural capital. NATURE | VOL 387 | 15 MAY 1997. [www.uvm.edu/giee/publications/Nature\\_Paper.pdf](http://www.uvm.edu/giee/publications/Nature_Paper.pdf)

<sup>9</sup> [http://www.mveirb.nt.ca/upload/ref\\_library/SEIA\\_paper.pdf](http://www.mveirb.nt.ca/upload/ref_library/SEIA_paper.pdf), page 11.

<sup>10</sup> World Health Organisation. Commission on Social Determinants of Health. Closing the Gap in a Generation. Who 2008.

<sup>11</sup> The Canadian Handbook on Health Impact Assessment, Chapter 3: Social Impact Assessment in Environmental Impact Assessment Protocols: A Social Science Perspective. [http://www.hc-sc.gc.ca/ewh-semnt/pubs/eval/handbook-guide/vol\\_3/social-socials-eng.php](http://www.hc-sc.gc.ca/ewh-semnt/pubs/eval/handbook-guide/vol_3/social-socials-eng.php)

<sup>12</sup> [http://www.mveirb.nt.ca/upload/ref\\_library/SEIA\\_paper.pdf](http://www.mveirb.nt.ca/upload/ref_library/SEIA_paper.pdf)

<sup>13</sup> [http://www.hc-sc.gc.ca/ewh-semnt/pubs/eval/handbook-guide/vol\\_3/social-socials-eng.php](http://www.hc-sc.gc.ca/ewh-semnt/pubs/eval/handbook-guide/vol_3/social-socials-eng.php)

<sup>14</sup> BC Stats, 2006

<sup>15</sup> <http://www.envsec.org/>

<sup>16</sup> Peck, Peter. Mining for Closure. [www.envsec.org/see/pub/miningfullb.pdf](http://www.envsec.org/see/pub/miningfullb.pdf)

<sup>17</sup> Leadbeater, David, quoted in Kuyek, J. and Coumans, C. No Rock Unturned: Revitalizing the Economies of Mining Dependent Communities. MiningWatch Canada, 2003, page 12

<sup>18</sup> CEAA. Op. cit. "Timing of Baseline Data Collection and Program Design...The follow-up program should be fully designed and a reliable baseline established during the environmental assessment phase of the project."