

# ENVIRONMENTAL ASSESSMENT & SUSTAINABLE DEVELOPMENT WORKSHOP

Building Blocks for a Sustainable Future

Final Workshop Report

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**Canadian Environmental Assessment Agency**

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## 1 Background

### 1.1 The Canadian Environmental Assessment Agency

The Canadian Environmental Assessment Agency (CEAA) was set up as an independent agency in 1995 with a mandate to better integrate environmental considerations into project planning. CEAA's commitment to sustainable development (SD) appears in the preamble to the *Canadian Environmental Assessment Act*: "...The Government of Canada seeks to achieve sustainable development by conserving and enhancing environmental quality and by encouraging and promoting economic development that conserves and enhances environmental quality. ...Environmental assessment provides an effective means of integrating environmental factors into planning and decision-making processes in a manner that promotes sustainable development."

Environmental assessment (EA) provides tools to incorporate environmental considerations systematically into project objectives and design. It supports the analysis of measures to reduce or avoid negative environmental and associated socio-economic impacts. Such integration makes it more likely that development will be sustainable.

The Agency does not carry out EAs itself. Rather, it is responsible for the federal EA legislation and regulations and is an advocate of high-quality EAs by investing in research and development, supporting federal departments and agencies with training and guidance, providing administrative support to independent mediators and panels and ensuring that the public has opportunities to participate effectively in the process.

### 1.2 SD and EA Workshop

CEAA committed to convening a workshop with its stakeholders to share best practices on environmental assessment (EA) and sustainable development (SD) in its 2000-2003 Sustainable Development Strategy. The objectives of the workshop were to (i) raise awareness, (ii) share best practices on the ways that EA can contribute to SD and (iii) encourage federal EA practitioners to make full use of the opportunities that EA provides to promote SD. The workshop included case studies of six EAs to demonstrate the opportunities available at various stages of the assessment process to promote more sustainable forms of development. The workshop focused on project-level EAs, and not strategic environmental assessment (SEA).

Case Studies	EA Type	Region	Status
Voisey's Bay Mineral Project	Panel Assessment	Atlantic	Completed
Kananaskis 2002 G8 Summit	Multiple screenings	Alberta	Completed
Randle Reef Sediment Remediation	Comprehensive study	Ontario	Ongoing
Vancouver Convention Centre Expansion Project	Screening	Pacific and Northern	Ongoing
740 Bel-Air Building Reconstruction	Screening	Quebec Region	Completed
TransCanada Highway Twinning in Banff National Park	Screening	Alberta	Ongoing

The workshop was structured as follows:

- Welcoming remarks – Robert Connelly, V.P., Policy Development, CEAA
- Keynote speaker address – Stephen Hazell
- Case study presentations and discussion panels
- Facilitated discussion on using EA to promote SD
- Closing remarks – Peter Sherhols, Director of Policy Analysis, CEAA

### **1.3 Workshop Report Format**

This workshop report is organized into three sections. Sections two and three present summaries of the workshop presentations and the case study discussion panels. Section four summarizes the facilitated discussion on using EA to promote SD. Additional information is presented in the four appendices:

- Appendix 1: Workshop agenda
- Appendix 2: Workshop participant list
- Appendix 3: Workshop organizing team members and biographies for the keynote speaker and case study presenters
- Appendix 4: Presentation materials

## 2 Workshop Presentations and Discussions

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### 2.1 Welcoming Remarks

Robert Connelly, V.P. Policy Development at CEAA, welcomed participants to the workshop. He noted that the promotion of sustainable development is a key role of the Agency, and EA is commonly referred to as a critical tool for SD. He briefly touched upon the recent amendments to the *Canadian Environmental Assessment Act*, which will result in an improved process, and indicated that CEAA's next SD strategy focuses on the implementation of the renewed Act.

Mr. Connelly recognized that EA practitioners struggle with how to prove in a systematic way that EA contributes to SD, and applauded the good examples being brought forth at the workshop. He highlighted the purpose of the workshop as helping to improve understanding of the relationship between EA and SD, and demonstrating how EA can further contribute to SD objectives.

Mr. Connelly noted that there is continued debate on whether the *Canadian Environmental Assessment Act* should move into sustainability assessment - similar debates exist internationally as well. For those interested, the International Association for Impact Assessment annual meeting, to be held in Vancouver in April 2004, will examine current practice and emerging opportunities in the application of impact assessment tools and methods for sustainability appraisal. The preliminary program for the conference is available at the following website:

[http://www.iaia.org/Non\\_Members/Conference/IAIA04/Conf\\_main\\_page2/Conference\\_main\\_index.htm](http://www.iaia.org/Non_Members/Conference/IAIA04/Conf_main_page2/Conference_main_index.htm).

### 2.2 Keynote Speaker Address

Stephen Hazell discussed the relationship between EA and SD. He argued that, while historically, the focus has been on meeting EA *process* requirements, there is a growing need to focus more on achieving *results* (environmental benefits and SD improvements attributable to EA) and demonstrating the utility of EA in meeting other government commitments. Improving the effectiveness of EA means having both good process *and* good results.

Mr. Hazell reviewed some of the successes and challenges of using EA as an SD tool. Compliance with CEAA requirements has been reasonably good for most major departments, and project EA has been institutionalized across the federal government. Decision makers are now familiar with EA and SD, and the mitigation of adverse environmental effects of projects has achieved significant environmental benefits. In order to demonstrate benefits and successes, it is important to go beyond anecdotal evidence. Some of the challenges for EA as an effective SD tool include:

- Demonstrating environmental (and social and economic) benefits of EA;
- Measuring these benefits;
- Demonstrating the value of EA to proponents and decision makers; and
- Engaging the public in a meaningful way.

Mr. Hazell noted that recent CEAA amendments should facilitate a results-based approach, which will require better information and tools as well as improved access to these instruments. There is also a need to continue managing legal risks. A major challenge to EA practitioners is to figure out how to determine contribution to the government's overall environmental agenda.

### 2.3 Key Issues Raised

The following are the key issues raised following Mr. Hazell's presentation.

- **Results scoping:** It may be preferable for EA results to focus on science-based information and establish a "base case" scenario, asking questions such as what would the project have been in the absence of EA, and where did it end up because of EA? Results of broad public opinion surveys are not as useful as science-based results. However, the preference for science-based information does not preclude the use and effectiveness of *focused* public surveys of a discrete population.
- **Science vs traditional knowledge:** Traditional knowledge is part of an effective EA, and should be gathered upfront, incorporated with scientific knowledge and used to understand project impacts. The most difficult part of using traditional knowledge is identifying the right communities and/or the right elders from whom to gather the information.
- **Integrating socioeconomic considerations into EA:** There are no guiding principles or guidance documents on integrating socioeconomic considerations with environmental considerations of EA, thus socioeconomic considerations are not systematically incorporated into EA. However, bigger projects, especially those under panel review and in the public domain, almost always have a broader SD focus. There is some debate whether socioeconomic considerations *should* be incorporated into EA – EA provides decision makers with the environmental implications of a project, and in many cases socioeconomic recommendations will be provided by other groups and generated by other information and advice. If EA's were to begin explicitly addressing socioeconomic considerations, it would risk duplicating the work of other processes/mechanisms.
- **Harmonization:** Harmonization with other jurisdictions and other EA processes may in some cases restrict CEAA's activities – for example, there may be pressure from other jurisdictions to shorten timelines.
- **Legal challenges:** The increasing number of legal challenges over the past 10 years is making it more difficult for scientists to do their jobs, but the federal government has won the majority of recent cases. The most significant legal problem at this time is with respect to the rights of First Nations communities.
- **Administrative burden:** Time spent on environmental science and issues in EA is constrained because the administrative burden of EA has become so high.

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### 3 Case Study Presentations

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#### 3.1 Voisey's Bay Mineral Project – Brian Torrie (Canadian Environmental Assessment Agency)

##### 3.1.1 Project Description

The Voisey's Bay Mineral Project involved the establishment of a new nickel mine and mill located in northern Labrador near Nain and Davis Inlet. Inco (Voisey's Bay Nickel Company or VBNC) was the project proponent. It was projected that the mine would produce 150 million tonnes of nickel (32 million tonnes from an open pit mine and 118 million tonnes from an underground mine), and create several hundred jobs over the 15-25 year project life (570 jobs during construction, 420 jobs in open pit, 950 jobs in underground phase).

The review process was established by a four-party Memorandum of Understanding (MOU) between the Government of Canada, the Government of Newfoundland, the Innu and the LIA (Labrador Inuit Association). A five-person public review panel was appointed in January 1997, and the final report was completed in March 1999. The report included 107 recommendations, the majority of which were accepted by the federal government. Some of the main issues included Aboriginal rights, smelter location, shipping (though land fast ice in winter and spring), impacts on wildlife habitat, and socio-economic impacts.

##### 3.1.2 Approach Used to Incorporate SD

The MOU listed the factors to be considered in the review process, including consideration of SD, the precautionary principle, the need for the project, and Aboriginal knowledge. To integrate SD into the review approach, the panel was guided by three principles:

- Preservation of ecosystem integrity and maintenance of biological diversity;
- Respect for the right of future generations to the sustainable use of renewable resources; and
- Attainment of durable and equitable social and economic benefits.

The panel's methodology was as follows:

- EIS (environmental impact statement) guidelines issued by the panel
- EIS issued by VBNC (Voisey's Bay Nickel Company)
- Public comments
- Government input (expert advice and regulatory role)
- Aboriginal input
- Public hearings
- Panel conclusions and recommendations

The panel concluded that the project could proceed without significant damage to ecosystems or reducing the capacity of renewable resources to support present and future generations, provided a number of conditions were met, such as EMS requirements, mitigation and monitoring, restrictions to

the shipping season, and VBNC, Aboriginal and government cooperation. These tools are vital to achieving the sustainable development of the project.

### **3.1.3 SD Benefits Resulting from the EA**

There were several SD benefits resulting from the EA, including:

- Dialogue created by EA process led to cooperation in addressing SD issues
- Public participation in EA
- Key issues identified, mitigation
- Information gathered that allowed addressing uncertainties, local concerns, aboriginal issues

### **3.1.4 Barriers Overcome**

Some of the SD barriers encountered included:

- Quality of information – inadequate baseline information
- Consideration/incorporation of Aboriginal knowledge
- Politics – the government of Newfoundland was willing to stall the process to increase its share of economic benefits from the project
- The evolving nature of the project added uncertainty to the assessment

### **3.1.5 Lessons Learned**

The main lessons learned throughout the process were:

- Uncertainty can be accepted and addressed.
- SD considerations can be taken into account as soon as the project description is clear.
- It is important for Responsible Authorities (RAs) to point out critical areas impacting on ecosystem, but it is the panel that must address the project's overall impact on SD.
- It is challenging to incorporate aboriginal knowledge and issues in the context of unsettled land claims and impact benefit agreements.

Further information on the Voisey's Bay Mineral Project can be found on CEAA's website at:

[http://www.ceaa-acee.gc.ca/010/0001/0001/0011/index\\_e.htm](http://www.ceaa-acee.gc.ca/010/0001/0001/0011/index_e.htm)

## **3.2 Kananaskis 2002 G8 Summit – Bruce Leeson (Parks Canada)**

### **3.2.1 Project Description**

The Department of Foreign Affairs and International Trade (DFAIT) was responsible for Canada's hosting of the 28<sup>th</sup> G8 Summit in June 2002. When it was announced in late summer 2001 that the next G8 Summit would be held in Kananaskis Country in Alberta, immediate concern arose for the potential adverse environmental impact that might result from this meeting. The strategy for the meeting was that world leaders and their close entourage (about 450 people) would stay and meet for two days at Kananaskis Village. The remainder of the large support delegation would stay in Calgary or other neighbouring communities such as Banff. The main media headquarters would operate from the Calgary Convention Center. Security arrangements involved about 4000 Department of National



Defence (DND) soldiers and about 3000 RCMP officers. The Calgary Police Service would be responsible, with the assistance of the RCMP, for law and order in the City of Calgary.

A challenge of this project was that it was a 36-hour event, as opposed to a physical development. A Director of Environmental Affairs was appointed to participate in planning the summit. DFAIT was the lead RA for ensuring compliance with the *Canadian Environmental Assessment Act*, and prepared an SEA of the overall event that served to identify sensitive species, spaces and times and to inform all other planning. Subsequently, DND and the RCMP prepared individual site and activity environmental screenings for their individual projects. Most of these assessments were not available for public review as they dealt with security issues. Many other federal departments were involved, but in the normal conduct of their mandated duties, and this involvement did not trigger the CEA Act. Several of the projects, such as the installation of a new fibre-optic communication line, were highly visible, and Parks Canada assessed them using its regular process.

### **3.2.2 Approach Used to Incorporate SD**

The G8 Kananaskis 2002 Summit environmental program had five major components:

- Environmental planning and impact assessment
- EnviroSafe training
- Green meetings
- Outreach and consultation – Envirostakeholders
- Environmental legacy

The approach to achieve SD was to establish goals based on the natural and social values of the area (“Take Nothing Away, Leave Nothing Behind”), technology, and best management practices. The G8 Environmental Affairs Directorate prepared these goals and accompanying operational techniques, with the help of many others. After approval by the Executive Director, G8 staff (about 350 members) were individually informed and trained regarding their personal responsibilities to make good stewardship choices in preparation for a Green Meeting. The public stakeholder outreach program presented G8’s stewardship commitment, strategies and techniques by way of lectures, a G8 website and a monthly news publication mailed to 33,000 addresses.

DND and RCMP each appointed a full time environmental affairs officer to direct their environmental program. The City of Calgary Environment Department prepared an environmental protection plan for sites and services that could be under threat should demonstration or terrorist incidents occur.

The Kananaskis Summit Environmental Legacy was established by the Government of Canada to commemorate the G8 Kananaskis Summit, and is designed to preserving the future of wildlife and wildlife habitat by:

- Enhancing the ecological integrity of Canada's Rocky Mountain ecosystem;
- Assisting in the conservation of wildlife and wildlife habitat in the Bow Valley and the Kananaskis regions;

- Facilitating wildlife movement in the Bow Valley Corridor between Banff National Park and Kananaskis Country; and
- Undertaking applied research and education of wildlife ecology in Kananaskis Country.

### **3.2.3 SD Benefits Resulting from the EA**

Some of the SD benefits resulting from the EA included:

- Both the natural and social environment were protected.
- Canada defined a new international benchmark in holding “Green Meetings.”
- Consumption of resources was reduced through stewardship techniques.
- Thousands of participants and stakeholders now have an awareness of stewardship choices.
- The G8 Legacy Project will benefit the environmental integrity of Kananaskis Country for many decades.

### **3.2.4 Barriers Overcome**

While there were no major barriers to achieve sustainable SD for the Kananaskis 2002 G8 Summit, there were a few minor ones worth mentioning:

- Even where there are clear goals, strong leadership and well-established management relationships, issues can still arise due to people not buying fully into the process.
- It is crucial to have adequate staff to meet the demands.
- Some high profile assessment can attract opposition from groups or individuals pursuing personal advocacy goals.

### **3.2.5 Lessons Learned**

The main lessons learned throughout the process were:

- It is critical that executive staff support the goals of environmental planning and sustainable development.
- This commitment must endure and frequently be renewed with staff and co-operators.
- Environmental planning and impact assessment and SD preparations must start early.
- Experienced technically skilled staff with good communication capabilities is paramount.
- Outreach and information sharing is elemental to gain confidence of stakeholders.
- An effective communications and media management plan is essential.

## **3.3 Randall Reef Sediment Remediation – Sheila Allan (Environment Canada)**

### **3.3.1 Project Description**

Randle Reef, in Hamilton Harbour, is one of more complex and contaminated sediment sites in the Great Lakes. This area contains high concentrations of PAHs, primarily due to historical inputs of coal tar. These PAHs are re-circulating and moving up into the food chain. Randle Reef is a priority for remediation in the Hamilton Harbour Remedial Action Plan (RAP), under the Great Lakes Water Quality Agreement & Canada-Ontario Agreement Respecting the Great Lakes Basin.

The Randall Reef EA began in 1995. There has been considerable input from stakeholders and agencies regarding the management of Randall Reef sediment, and key issues and concerns related to the various alternatives put forth for dealing with the sediment include:

<b>Do nothing:</b>	Continued risk of exposure to contaminants Migration of contaminants within the harbour
<b>Removal from harbour:</b>	High cost (with or without treatment) Duration and uncertainty of treatment technologies Risk of exposure Lack of disposal sites for “treated” sediment Disposal without treatment is not “removal” Lack of funding partnerships
<b>Removal, “conditioning” and reuse as sinter plant feedstock:</b>	Health risk to steelworkers Effects of emissions on downwind communities Contrary to toxics virtual elimination policies
<b><i>In-situ</i> containment:</b>	Inconsistency with RAP objectives of no further infilling Disruption of harbour uses Loss of fish habitat Poor aesthetics

These concerns precluded reaching consensus on a preferred approach. In November 2001, Environment Canada (EC) formed a multi-stakeholder Project Advisory Group (PAG) consisting of 17 participating organizations to develop a consensus around a solution that would satisfy the objectives of remediation and those of the stakeholders represented. The purpose of the project is to reduce the exposure of organisms in the harbour to the most persistent toxic substances in the sediments. The project will remediate a priority zone of sediments contaminated with high levels of PAHs, as an initial step to control sources of contamination to the local ecosystem.

PAG considered a range of remediation options. After 13 months, PAG proposed an *in-situ* containment option as the preferred alternative. This option provides a cost-effective solution for remediating the priority zone of highly contaminated sediment, is a potential solution for other contaminated sediment in the two study areas, and provides greater opportunity for partnership resources. The *in-situ* containment involves an in-water containment facility to isolate and cover the majority of the most highly PAH contaminated sediments. The facility will be approximately 9.5 hectares, and will contain and cover approximately 640,000 m<sup>3</sup> of acutely toxic sediments. The facility will be mixed-use, functioning as a pier and recreation area in addition to a containment facility.

### 3.3.2 Approach Used to Incorporate SD

EC designed the process to keep the issue alive and find alternative solutions in light of substantial barriers such as lack of funding, which was the main obstacle in implementing the first proposed approach of removing the sediment and sending it to Sarnia for treatment. Part of EC’s approach was the creation of the PAG, where EC played the role of stakeholder instead of decision-maker. In that

context, its role was more to coordinate discussions, and let other stakeholders define sustainability. EC also presented information to stakeholder groups on their own turf, consulting beyond the PAG and allowing communication that might otherwise have been fettered by the presence of individuals with opposing interests.

The PAG was a key element in the approach to incorporate SD, and included a wide range of stakeholders (federal, provincial and municipal governments, industry, shipping, citizens, ENGOs, workers' safety, technical experts). Their approach to SD was through a democratic process that involved information exchange, negotiation and compromise to satisfy a wide range of interests, including:

- Aquatic ecosystem restoration
- Human health and safety
- Economic opportunities
- Navigation
- Aesthetics
- Timeliness
- Affordability
- Long-term sustainability

### **3.3.3 SD Benefits Resulting from the EA**

The benefits of using an SD approach were:

- Consensus on a solution that had been ruled out in earlier phases of EA;
- Agreement that *in-situ* containment would eliminate the health and environmental risks of removal; and
- Recognition that a multi-use facility would remediate a larger area and meet the shared objective of “a whole harbour solution.

### **3.3.4 Barriers Overcome**

Some of the SD barriers included:

- Initial public opposition to building on top of the sediments, and more support for removal instead.
- Lack of funding

### **3.3.5 Lessons Learned**

The main lessons learned throughout the process were:

- SD can be introduced early in the EA process by forming representative stakeholder advisory group.
- The RA coordinates discussions but stakeholders define sustainability.
- A shared project objective statement helps stakeholders maintain focus on SD as new issues and conflicting interests arise.
- Be prepared to present information to stakeholder groups on their own turf.
- Prepare to deal with non-program issues, such as worker safety, economic opportunities, cultural values, aesthetics, politics and public perception.

- New information, more effective public consultation and interest-based negotiations can lead to a 180° turnaround in opinion.
- Proponents, regulators and stakeholders may accept a solution that, although not ideal to them, is recognized as the most practicable alternative that will fulfill the project objectives.

### **3.4 Vancouver Convention Centre Expansion Project – Keith Grady (Infrastructure Canada)**

#### **3.4.1 Project Description**

The Vancouver Convention Centre Expansion Project (VCCEP) is a new 68,000m<sup>2</sup> facility on 4.6 hectares on Burrard Inlet. The centre will cost \$600 million, of which the federal government is contributing \$200 million. The VCCEP is a federal and BC “showcase” project, and there is a lot of interest from key players to make the right environmental choices. The BC Environmental Assessment Office (BCEAO) is leading a harmonized EA.

#### **3.4.2 Approach Used to Incorporate SD**

The VCCEP is being subject to a separate sustainability review, outside of the EA, because the joint federal-provincial process does not lend itself to the consideration of these issues. The objective of the sustainability review is to ensure that the building meets “state of the art” sustainability objectives in 2003. The sustainability review process includes:

- A stakeholder expert advisory committee
- White paper – defined issues, describes best practices and promotes dialogue
- Design charrettes with the advisory committee, design team and tenants
- Use of LEED (Leadership in Energy and Environmental Design) review framework augmented with project specific metrics

#### **3.4.3 SD Benefits Resulting from the EA**

The creation of a parallel process allowed PWGSC to consider issues such as on site sustainability, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation in design. The review will be completed in the Spring of 2004.

#### **3.4.4 Barriers Overcome**

Some of the key challenges include:

- Scoping “sustainability” issues – what are the opportunities?
- Determining the review process – In a joint review, there may be less scope to introduce additional SD considerations.
- Finding appropriate tools and benchmarks
- Documenting the review and findings
- Deciding “how hard to push”

### **3.4.5 Lessons Learned**

Some of the lessons learned include:

- There is a broad interest in sustainability, but it needs to accommodate stakeholder interests. Presenting a business case for sustainability is useful.
- Other needs include:
  - An approach based on consensus around shared interests
  - A facilitator, driver or champion
  - Flexibility to design the process to fit circumstances – issues, players, tools, etc.
  - An early start to flag issues, players, etc.
  - To understand the bigger picture

## **3.5 740 Bel-Air Building Reconstruction – Isabelle Roy (Public Works and Government Services Canada)**

### **3.5.1 Project Description**

The property, close to downtown Montreal, included 8 buildings and had seen a variety of industrial and government (DND, storage, offices) uses over the past 150 years. The project proceeded in 2 phases: (i) building deconstruction, with maximum material recovery, and site decontamination; (ii) new building design according to the LEED standard (silver level). The new building, to be started in 2004, will house four federal departments and provide over 13,000 m<sup>2</sup> of office space.

### **3.5.2 Approach Used to Incorporate SD**

PWGSC was guided by the objectives in its sustainable development strategy related to solid waste management, energy efficiency and greenhouse gases. During Phase 1, PWGSC stipulated resource recovery objectives in its tender documents in order to minimize the amount of solid waste to be generated from the buildings deconstruction. Contaminated soils were characterised and sorted in order to send them to the appropriate disposal facilities. In Phase 2, tender documents stipulated, among other things, the use of renewable energy technologies (solar water heating, geothermal space heating) as well as design features to capture rainwater and reduce energy use.

### **3.5.3 SD Benefits Resulting from the EA**

The integration of SD objectives into the project enabled the recovery of 9000 cubic metres of building material during the deconstruction phase with a corresponding lengthening in the life of landfill sites. It is estimated that the building design will avoid the generation of 300 tonnes of CO<sup>2</sup> per year and a return on the additional construction costs in 9 years. Contractors who worked on the site acquired skills that they will be able to use on other projects.

### **3.5.4 Barriers Overcome**

There were no significant barriers to overcome as the EA team was involved from the beginning. This involvement facilitated the full consideration of environmental issues in the design phase. The

Department's SDS also facilitated the consideration of matters that would not have otherwise fallen under the terms of a traditional EA, such as community needs and a longer time scale.

### **3.5.5 Lessons Learned**

The existence of specific SD objectives in the PWGSC sustainable development strategy helped to guide the assessment. The consideration of environmental factors at the very beginning of the planning process gave greater scope to be proactive.

## **3.6 TransCanada Highway Twinning in Banff National Park – Bruce Leeson (Parks Canada)**

### **3.6.1 Project Description**

During the early 1970's, the inadequacy of the TCH (TransCanada Highway) through Banff National Park to handle the recreational, trucking and local traffic became pressing. Planning through the mid '70's eventually culminated in one of the first ever EA Panels, in 1979. Intense debate and study focused on the acceptability of a "freeway" through Banff, the opportunity for an alternative route, and the predicted adverse environmental impact of constructing and operating such a highway in this area. The final outcome of the panel was the approval of the project, subject to exceptional measures to avoid, mitigate and manage the potential adverse environmental effects of the highway widening.

Construction of Phase I began in late fall of 1979. Before Phase I was completed, Phase II was brought forward and was also subject of an EA Panel. PWGSC was the federal project proponent for Phases I and II. With approval in 1984, construction continued to an interim conclusion in 1987. Following a budget interruption between 1990 and 1995, no further upgrades took place until increasing human fatalities and worsening travel conditions compelled continuance of the twinning project. Approval for Phase IIIA was gained without the necessity of a formal Panel review, even though the assessment process and public consultation was nearly equal in intensity. The Federal Government now placed Parks Canada (PC) as the Responsible Authority for the TCH twinning project.

In October 2003, Infrastructure Canada announced a \$50 million budget to resume upgrading the TCH – Phase IIIB, through Banff. Parks Canada will be the Responsible Authority and Federal EA Coordinator. The project will be assessed at the Environmental Screening level, although the intensity of investigation, environmental planning, impact assessment and stakeholder consultation will exceed the standard of a Comprehensive Study.

### **3.6.2 Approach Used to Incorporate SD**

PC will employ all contemporary expectations of SD in planning for Phase IIIB. All traditional aspects of large, linear project planning will be pursued (wildlife, vegetation, hydrology and watershed, archaeological and cultural values, etc.). Also, new concepts of continental wildlife habitat connectivity (Yukon to Yellowstone Conservation Initiative (Y2Y), connectivity for biological integrity and genetic diversity, critical mass population issues, etc.) will be investigated.

The outreach, communication and consultation will be extensive. There are many stakeholders with a wide variety of views about the need for, appropriateness of, methods to employ, and urgency of the project. The “people interaction” element of planning and assessing the project is likely to be more demanding than the environmental science or engineering design components. There will be early scoping exercises, draft terms of reference, ongoing advisory committees and subcommittees at several levels and on several issues, draft reports and project designs and revised reports. This exercise has begun and will proceed through to a determination in the fall 2004.

### **3.6.3 SD Benefits Resulting from the EA**

This EA has just begun, and no SD benefits are yet certain.

### **3.6.4 Barriers To Overcome**

In the recent weeks following the announcement of the resumed TCH upgrading project, several stakeholders have stated their viewpoint about the future undertaking. Repeated media comment reveals public expectations that exceed the funds available, which will lead to disappointment and competition for favoured locations or elements of improvement. Critics are claiming that the existing wildlife defences do not work. In their view, extended lengths of elevated highway are mandatory for effective wildlife protection. The cost of building an elevated highway, however, precludes this option.

It is expected that others will lobby for a speed reduction strategy, at the same time when most of the traveling public and commercial carriers want to go faster. These differences reflect (i) Calgary’s evolution as an inland supply and distribution hub for manufactured products arriving from the Pacific Rim and elsewhere through the port of Vancouver; and (ii) public expectation that Canada will safeguard the ecological integrity of Canada’s first national park, a World Heritage Site, an international icon of Canada’s wilderness identity, and engine of a multimillion dollar tourist economy in Alberta.

### **3.6.5 Lessons To Be Learned**

Some of the lessons to be learned throughout this process include:

- It will be critical for PC to clearly communicate the already established priority goals of the project – improving traveler’s safety, improving wildlife and ecological integrity, and reducing the economic bottleneck.
- It will be important to bring stakeholder expectations in line with resources, and establish a realistic preparedness to set priorities.
- Real environmental science must not be held captive by ideology, rhetoric and advocacy. In the final analysis, good judgment must prevail.
- PC must be prepared to engage in more extensive communication and consultation than normal in order to bring the TCH planning and assessment exercise to a defensible determination.



### 3.7 Case Study Discussions

Questions proposed for the case study discussions included:

- What factors (opportunities) accounted for the success of your EA?
- What obstacles did you have to overcome?
- How did you demonstrate value to decision-makers?
- What were the main lessons from experience?

The following are the key issues raised during these discussions.

- **Creating opportunities to promote SD** - Less than half of one percent of EA's are panel reviews, and EA practitioners do not have all of the mechanisms that are available to a panel to achieve SD objectives. It was questioned whether any of these projects could have achieved as much as they did if the EAs had been *typical* screenings. The idea of using "micro-panels" on smaller projects was proposed as a mechanism to engage the public and give greater scope for the consideration of SD objectives. Both the G8 "Envirogroup" meetings and the Randle Reef Public Advisory Group are examples of how to engage the public in non-panel environmental assessments.
- **Clear goals and objectives** – A statement of clear goals and objectives, such as the axiom "Take Nothing Away, Leave Nothing Behind", helps to focus projects.
- **Getting in early** – Integrating SD early in the EA process is absolutely crucial. The first step of an EA is environmental planning, and SD should be integrated in this stage.
- **Defining sustainability** – In some cases, the option of saying "no" to a project or development may not exist regardless of the environmental costs involved. Where this is the case, some will question whether EA can truly lead to sustainability. In a related vein, it was pointed out that the definition of sustainability may change over time, and what was once considered an unsustainable or unacceptable option may become a preferred choice. In other cases, an imperfect project (whose environmental risks an EA reduces but that may not otherwise meet sustainability criteria) may still be desirable where the risk of delayed action may be too high ("letting the perfect be the enemy of the good").
- **Influence on later projects and the importance of high-level buy-in** – The G8 SEA was pivotal in influencing later projects because it demonstrated high-level, continuous commitment to environmental protection. The SEA led to hundreds of individual screenings and follow-up, and ultimately resulted in the G8 Legacy Project. The high-level commitment sensitized the other staff working on the project to the environmental implications of their actions, and extensive stewardship training provided the education necessary for everyone to carry out their individual tasks in the most sensitive, safe and sustainable manner possible. High-level buy-in was a common element in all three case studies, and recognized as a critical element of success in EA.
- **Importance of follow-up** – Providing follow-up on a project is important, particularly where human health is concern.
- **Measuring benefits** – Measuring the results and benefits of SD can be a challenge, especially when considering the value added from intangibles such as public participation. However,

communicating results and benefits may help sensitize stakeholders early in the process about the benefits of EA and SD.

- **Screenings and detailed analysis** – All EA’s presented at the workshop went beyond a typical screening and, in some cases, some of the most significant EA elements were happening outside the screening context. In such cases, how should the link be made between the screening and the more detailed analysis? This is a challenge and sometimes the best that can be done is to reference the sustainability review in the EA process and documentation. The important thing is to make an informed decision, and whether it comes out of an EA or some other process is not the critical issue.
- **Conflicting paradigms** – Federal departments, such as Parks Canada (PC), may have to confront what appear to be conflicting paradigms: while SD is widely accepted as a goal of public policy, in some settings (e.g., national parks), ecological integrity may more properly be the first priority. PC resolves this apparent conflict by making ecological integrity one but not the *only* priority. PC has an obligation to examine other priorities in addition to ecological integrity. The acceptable mix of benefits and disadvantages may need to be adjusted over time.
- **The extent to which EA promotes SD** – In many cases, EA is limited to reducing environmental harm, which is a necessary but insufficient precondition to SD. Only when EA results in optimizing environmental benefits can we say that its goals are fully in line with SD.
- **Leveraging opportunity** – It is important for EA practitioners not to limit themselves to the sometimes narrow terms of a project-specific EA, but to look at opportunities to generate information that can help other agencies and, conversely, seek the participation of such agencies where these have information and management roles that can help in the assessment.

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## 4 Facilitated Discussion on Using EA to Promote SD

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The case studies presented at the workshop shared a number of features that make EA an effective tool to promote SD:

- EA was integrated early in the planning process
- The RAs encouraged broad public involvement
- The assessments focused on sound design rather than just avoiding harm
- The EAs set clear goals to be met.

A series of questions were proposed to facilitate a plenary discussion on using EA to promote SD:

- How can these features be promoted?
- Do practitioners have the tools they need to do the job? What are they missing?
- Are the benefits of using EA to promote SD clear to decision-makers? Do they need to be better communicated?
- To the presenters: are the conditions that allowed you to succeed replicable?
- How can departments make a closer link between EA and the promotion of SD?
- What more should CEAA do to promote good practice?

The following are the key issues raised during this facilitated discussion.

- **Cultural change** – SD is a way of thinking, and cultural change is required to adopt this new approach and build the necessary tools, process, cooperation and support. SD is the integration of relevant social, economic and environmental issues, and the new culture should encourage the integration of benefits to create a win-win situation across all these elements. Cultural change takes time and effort, but once it has been achieved, SD will be “business as usual.” The approaches to affecting cultural change may vary, but the impetus must come from the top *and* the bottom. The book *The Tipping Point: How Little Things Can Make a Big Difference* (Malcolm Gladwell, 2001), which looks at how, when and why cultural change takes place in society, may be a useful resource.
- **Challenges on early integration of EA** – While the idea of integrating EA early in the process is obviously sound, some construction engineers come forward with a *concept* at the EA stage instead of a full design. The EA practitioner is then faced with a dilemma – to conduct the screening in principle based on the proposed concept, or to wait for the detailed design when a number of irrevocable decisions may already have been taken. A possible solution is to define the non-negotiable environmental protection values at the concept phase, and, once the design is completed, check that these values are in fact protected.
- **Commitment to EA and SD** – PWGSC has made a commitment in its SDS to use EA systematically to promote SD. If other departments did the same, it would increase the likelihood that EA and SD would be complementary.

- **Thinking outside the “EA box”** – To integrate SD in the EA process, it may be important to think outside the “EA box.” Efforts to minimize or mitigate impacts through an EA are not necessarily promoting SD. To promote SD, it is crucial to think about “value-added”, about going *beyond* harm reduction and making real contributions to long-term environmental improvements. On all projects and on a day-to-day basis, the mindset should be “how can I ensure that this project contributes to SD, and that I am not just stopping the environmental decline but actually improving the situation? What kind of contribution can I make?” Taking this approach is easier if the RA is a proponent or funder – regulators may find this approach challenging, as they cannot force people to go beyond regulatory requirements.
- **EA as a component of SD** – EA is only one component of SD, which is a much broader concept that includes economic and social factors in addition to environmental ones. By itself, EA will not necessarily lead to SD but it is an essential component of SD.
- **Cumulative effects** – Addressing cumulative effects may require creative solutions, such as offsetting environmental losses in one area by creating environmental gains in another (e.g., cash in lieu of green space or creating a restoration fund).
- **Sharing best practices** – Continued sharing of best practices and discussion of the links between EA and SD in workshops similar to this one would be a valuable resource for EA practitioners.

## **5 Closing Remarks**

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Peter Sherhols, Director of Policy Analysis at CEAA, closed the workshop with thanks to the workshop speakers and facilitator. He welcomed participants' comments on the workshop, and indicated that a similar workshop focusing on SEA would be held in February 2004. In response to participants' expression that they would like to continue these discussions at future workshops, he indicated that the Agency will consider organizing similar events in the future to continue to build upon ideas generated today.

## APPENDIX 1 – Workshop Agenda

### CEAA WORKSHOP ON SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL ASSESSMENT

November 21, 2003

Monterey Inn Resort & Conference Center,  
2259 Prince Of Wales Drive, Ottawa, Ontario

#### DRAFT Agenda

8:00	Continental breakfast
9:00	Opening – Overview of agenda and workshop logistics
9:05	Welcoming remarks - Robert Connelly, CEAA V.P., Policy Development
9:15	Keynote Speaker: Stephen Hazell –The relationship between SD and EA
<b>10:20</b>	<b>Break</b>
10:35	Introduction to Case Study Presentations
10:40	Case Study Presentations: <ul style="list-style-type: none"> <li>i) Voisey's Bay Mineral Project (Brian Torrie, CEAA)</li> <li>ii) Kananaskis G-8 Summit (Bruce Leeson, Parks Canada)</li> <li>Randle Reef Sediment Remediation Project (Sheila Allan, Environment Canada)</li> </ul>
11:40	Case Study Discussion Panel
<b>12:15</b>	<b>Lunch (on site)</b>
1:30	Case Study Presentations: <ul style="list-style-type: none"> <li>i) Vancouver Convention Centre Expansion Project (Keith Grady, Infrastructure Canada)</li> <li>ii) 740 Bel-Air Building Reconstruction (Isabelle Roy, Public Works and Government Services Canada)</li> <li>iii) Trans-Canada Highway twinning through Banff and Jasper National Park (Bruce Leeson, Parks Canada)</li> </ul>
2:30	Case Study Discussion Panel
<b>3:00</b>	<b>Break</b>
3:15	Facilitated discussion on using EA to promote SD
4:30	Closing – Peter Sherhols

## APPENDIX 2 – Workshop Participants List

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## **APPENDIX 3 – Biographies for Keynote Speaker and Case Study Presenters**

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### **Keynote Speaker Biography**

#### ***Stephen Hazell***

Stephen Hazell is outgoing national executive director of the Canadian Parks and Wilderness Society (CPAWS). He has over 18 years experience in the law, policy and practice of environmental assessment. CPAWS is a frequent participant in environmental assessments pursuant to the *Canadian Environmental Assessment Act*, comprehensive claims processes, and provincial EA laws (recent examples include the Kananaskis G-8 Summit, the Moraine Lake development in Jasper Park, the winter road across Wood Buffalo National Park, and mining developments in the South Nahanni watershed). Stephen recently served as principal consultant to the House of Commons Standing Committee on the Environment and Sustainable Development for its report *Sustainable Development and Environmental Assessment: Beyond Bill C-9*.

From 1995 to 2000, Stephen served as principal and general counsel at Marbek Resource Consultants, where he advised the Canadian Environmental Assessment Agency, federal departments and other clients on environmental assessment issues. From 1992 to 1995, Stephen led the team at CEAA that developed the regulations for the implementation of the *Canadian Environmental Assessment Act*. Between 1989 and 1992, Stephen served as executive director and general counsel to the Canadian Arctic Resources Committee, co-chairing a national caucus of environmental lawyers and activists that successfully advocated a federal environmental assessment statute (now the *Canadian Environmental Assessment Act*). Prior to this, he served as general counsel to the Canadian Wildlife Federation. In this capacity, he initiated the Rafferty-Alameda lawsuit, in which the Federal Court first held that the Environmental Assessment and Review Process Guidelines Order in Council was a law of general application.

Stephen holds a Master of Science degree in Plant Ecology from the University of Toronto and a Law degree from Queen's University. He has been a member in good standing of the Law Society of Upper Canada since 1983. Stephen's book on Canadian EA, *Canada vs The Environment: Federal Environmental Assessment 1984-1998*, was published in June 1999.

### **Case Study Presenters Biographies**

#### ***Sheila Allan – Environment Canada***

Sheila Allan has worked in environmental assessment since 1996 and, as an EA practitioner and the Regional EA Coordinator, has extensive experience in conducting and reviewing environmental assessments on behalf of Environment Canada. In 2002, Sheila received the Department's National EA Practitioner Award.

***Keith Grady – Infrastructure Canada***

Keith Grady has worked in EA for fifteen years, with most of that time spent at the Canadian Environmental Assessment Agency. In 1998, he decided that he did not know enough about how things were supposed to work and so completed a Master's in EIA and Management at the University of Manchester. Since December 2002, he has acted as the Senior Environmental Coordinator at Infrastructure Canada.

***Dr. Bruce Leeson – Parks Canada***

Dr. Bruce Leeson has lived and worked in the Rocky Mountains since 1969. After graduating from Montana State University in 1972, Bruce took a position as an environmental scientist with Parks Canada, where he has since worked, primarily in the National Parks of western and northern Canada. Bruce's work has focussed on environmental planning, impact assessment, and stewardship issues inherent in managing appreciation of protected areas. Dr. Leeson's most recent assignment was Director of Environmental Affairs for the Kananaskis G8 Summit 2002. Although Bruce has returned to his position as Senior Environmental Assessment Scientist for Parks Canada – Western, his involvement with G8 continues as Senior Environmental Advisor in the undertaking of the Kananaskis G8 Environmental Legacy project.

***Isabelle Roy – Public Works and Government Services Canada***

Isabelle Roy travaille dans le domaine de l'environnement depuis 6 ans dont 3 chez Travaux publics et Services gouvernementaux Canada. Biologiste de formation, elle réalise et coordonne des évaluations environnementales pour son ministère et répond aux demandes d'autres ministères. Elle a principalement oeuvré dans le secteur de l'immobilier et des infrastructures de services.

***Brian Torrie – Canadian Environmental Assessment Agency***

Brian Torrie is currently acting Director of Project Assessment for the Canadian Environmental Assessment Agency. He recently returned to the Agency after spending the last four years on assignment at Citizenship and Immigration Canada, Indian and Northern Affairs Canada, and the Department of Finance. He had worked at the Agency from 1993 to 1999 with his last position being Panel Manager for the Voisey's Bay Environmental Assessment Joint Review Panel.

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## APPENDIX 4 – Presentation Materials

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### Stephen Hazell's Presentation

**CEAA WORKSHOP  
NOVEMBER 21, 2003**

**SUSTAINABLE  
DEVELOPMENT AND  
ENVIRONMENTAL  
ASSESSMENT**

**STEPHEN HAZELL**

**INTRODUCTION**

- EA and SD - Context
- A Results-based Approach to EA
- Challenges of EA as SD tool
- Successes of EA as SD tool
- Getting Results in EA
- A Challenge to Practitioners

## **FOCUS ON RESULTS**

- Historical focus on meeting EA *process* requirements (Mea culpa!)
- Need to focus more on achieving *results* (environmental benefits attributable to EA, project SD improvements)
- Demonstrate utility of EA in meeting other government commitments (Kyoto, biodiversity, wilderness commitments)

## **CEAA DEFINITIONS**

- SD: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”
- EA: “assessment of the environmental effects of the project”

## **CONTEXT FOR EA AND SD**

- EA only one tool to achieve SD
- Others include:
  - economic instruments
  - regulatory approaches
  - sustainable development strategies
  - voluntary approaches
- Can SD be achieved through project (site-specific) EA?
- Do regional and cumulative EAs help?

## **CEAA PREAMBLE**

- Whereas the Government of Canada seeks to achieve SD by conserving and enhancing environmental quality and by encouraging and promoting economic development that conserves and enhances environmental quality
- Whereas EA provides an effective means of integrating environmental factors into planning and decision-making in a manner that promotes SD

## **CEAA PURPOSES**

- Ensure that projects are considered in a careful and precautionary manner before federal authorities take action in connection with them, in order to ensure that such projects do not cause significant adverse environmental effects
- Encourage RAs to take actions that promote SD and thereby maintain a healthy environment and a healthy economy

## **RESULTS VS. PROCESS**

- Is EA truly an “effective” means of integrating environmental factors into
  - Decision-making?
  - Planning?
  - In a manner that promotes SD?
- Doesn't effectiveness mean good process and good results?

## **EA/SD SUCCESSES**

- Compliance with CEAA requirements reasonably good
- Project EA institutionalized across federal government
- Decision makers familiar with EA and SD
- Mitigation of adverse environmental effects of projects has achieved significant environmental benefits

## **CHALLENGES FOR EA AS EFFECTIVE TOOL FOR SD**

- Demonstrating environmental (and social and economic) benefits of EA
- Measuring these benefits
- Demonstrating value of EA to proponents
- Demonstrating value of EA to decision makers
- Engaging the public meaningfully

## **DEMONSTRATING BENEFITS**

- EA cannot be just about meeting process requirements and ensuring good information for decision makers
- Demonstrate clear environmental benefits for project, for example:
  - tonnes of greenhouse gas emissions avoided
  - hectares of critical habitat of species at risk protected
- Have the case studies done this?

## **MEASURING BENEFITS**

- Significance test in CEAA - a debased currency
- Professional judgement too often substitutes for good information (e.g., GSX, Moraine Lake)
- Practitioners need better access to data bases and tools
- Standard set of indicators is needed to assist in measuring benefits

## **DEMONSTRATING VALUE TO DECISION-MAKERS**

- CEAA application to smaller projects is pretty good, but are the results there?
- "Don't Sweat the Big Stuff" - reluctance to apply EA to bigger projects (Belledune)
- Difficult to compare project economic benefits (jobs) against ecological harms
- How to overcome the hierarchical/geographic distance between practitioners and decision-makers?

## **DEMONSTRATING VALUE TO PROPONENTS**

- Late-stage application of CEAA frustrates proponents
- EA focuses on avoiding significant effects, mitigating harm not on sound design
- EA rarely part of land use planning processes
- Should proponents be required to gather data better managed by government?



## **ENGAGING THE PUBLIC**

- Interested publics often think EA is a figleaf or smokescreen
- Resources, expertise of interested publics an ongoing issue
- CEAA amendment (2003) providing participant funding for comprehensive studies should help

## **GETTING RESULTS**

- CEAA amendments (2003) should facilitate a results-based approach:
  - Clarification of authority with respect to mitigation measures (s. 37)
  - Requirements relating to follow-up programs should enable a learning process about what mitigation measures yield results (s.38)

## **GETTING RESULTS: IMPLICATIONS**

- Information (e.g., data bases) and tools needs to be much better
- Practitioner access to information and tools needs to improve
- Need for Canadian Information System for the Environment (CISE)?
- New resources for practitioners, reallocation of existing resources

## **GETTING RESULTS: DATA BASES AND TOOLS**

- Access to finer-scale data bases:
  - wildlife distribution and abundance (especially species at risk and critical habitat)
  - air and water pollutant loadings from other projects in watershed/airshed
- Better tools/models (or access) to allow calculation of:
  - greenhouse gas emissions for buildings, forest-cutting, wetland drainage etc.
  - impacts of roads and other linear developments on wildlife and wildlife habitat


## **GETTING RESULTS: MANAGING LEGAL RISKS**

- Threat of legal actions by NGOs, Aboriginal communities, proponents is real
- Such actions usually are brought in relation to the largest 10 per cent of projects
- Opportunities to redeploy resources from EAs of projects that show few results and pose small legal risks to EAs that can show results (e.g., class screenings)?


## **CHALLENGE TO PRACTITIONERS**

- EA will really be contributing to SD when we can demonstrate results that show ecological, economic and social benefits:
  - Number of tonnes of emitted carbon that was avoided because of EA
  - Number of tonnes of air or water pollutants that were avoided
  - Number of hectares of wildlife habitat protected, or effectiveness maintained

**Voisey's Bay Mineral Project – Brian Torrie (Canadian Environmental Assessment Agency)**

Canadian Environmental  
Assessment Agency

Agence canadienne  
d'évaluation environnementale




## VOISEY'S BAY


### ENVIRONMENTAL ASSESSMENT

### PANEL AND SUSTAINABLE


### DEVELOPMENT

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Canadian Environmental  
Assessment Agency


Agence canadienne  
d'évaluation environnementale




## 1. PROJECT

- **Proponent: INCO (Voisey's Bay Nickel Company)**
- **Project Description:**
  - o Mine and mill located in northern Labrador near Nain and Davis Inlet;
  - o Nickel: open pit mine (32 tonnes), underground (118 tonnes), shipping component;
  - o Two tailings basins;
  - o 570 jobs during construction, 420 jobs in open pit, 950 jobs in underground phase, 15-25 year project life.
- **Process:**
  - o Process established by 4-party MOU (Canada, Nfld., Innu and LIA);
  - o 5-person Panel appointed in January 1997;
  - o Report completed in March 1999, federal response followed.

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## 2. MAIN ISSUES

- **Aboriginal rights — Land claims and Impact Benefit Agreements;**
- **Smelter location (scope);**
- **Shipping — through land fast ice;**
- **Impacts on fish habitat, caribou, birds;**
- **Socio-economic impacts.**

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## 3. APPROACH USED TO INCORPORATE SD

- **MOU listed factors to be considered:**
  - o Consideration of SD
  - o Precautionary principle
  - o Need for Project
  - o Aboriginal Knowledge

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## 4. PANEL'S APPROACH TO SD

- **Guided by principles :**
  - o Preservation of ecosystem integrity and maintenance of biological diversity;
  - o Respect for the right of future generations to sustainable use of renewable resources;
  - o Attainment of durable and equitable social and economic benefits.

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## **5. METHODOLOGY**

- EIS guidelines
- VBNC EIS
- Public comments
- Government Input – expert advice and regulatory role
- Aboriginal input
- Public Participation
- Panel conclusions/recommendations

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## **6. PANEL CONCLUSIONS**

- Project could proceed without significant damage to ecosystems or reducing the capacity of renewable resources to support present and future generations but needed...
  - Environmental Management System (EMS)
  - Mitigation and monitoring
  - VBNC, Aboriginal and government co-operation
- Impacts would be positive and adverse, not distributed equally, but harvesting economy is not sustainable and change will come in any case
- In terms of precautionary principle, recommendations to deal with uncertainty

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## **7. SD BENEFITS**

- Dialogue created by EA process led to cooperation to address SD issues
- Public Participation
- Key issues identified, mitigation
- Information, dealing with uncertainties, local concerns, aboriginal issues

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## **8. SD BARRIERS**

- **Quality of information – never enough baseline information**
- **Consideration/incorporation of aboriginal knowledge**
- **Politics**
- **Uncertainty – evolving project**

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## **9. LESSONS LEARNED FOR SD** **IN PANEL PROCESS**

- **Uncertainty can be accepted and addressed.**
- **SD considerations can be taken as soon as project description is clear.**
- **Important for RAs to point out critical areas impacting on ecosystem but it is the Panel that must address the project's overall impact on SD.**
- **Challenging to incorporate aboriginal knowledge and issues in the context of unsettled land claims and IBAs.**

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Canada

**Kananaskis 2002 G8 Summit – Bruce Leeson (Parks Canada)*****Project Description***

The Department of Foreign Affairs and International Trade (DFAIT) was responsible for Canada's hosting of the 28<sup>th</sup> G8 Summit in June 2002. The G8 is an informal group of eight countries: Canada, France, Germany, Italy, Russia, Japan, the United Kingdom and the United States. Every year since 1975, the leaders of these countries, and the European Union, meet to discuss economic and foreign policies of global significance. When Prime Minister Chretien announced in late summer 2001 that the next G8 Summit would be held in Kananaskis Country in Alberta, immediate concern arose for the potential adverse environmental impact that might result from this meeting. Kananaskis Country is a Province of Alberta wildland – a protected area contiguous to Banff National Park, much used and highly valued by Albertans. Worry and objection about the possible impacts in Calgary and nearby smaller communities emerged as well. Recent meetings of world leaders had been beset by violent protest disturbances that damaged local environments eg. Seattle, Genoa, Quebec City. This concern greatly intensified after the New York and Washington terrorist attacks on 11 September 2001. Clearly, elaborate security provisions would be required.

The strategy for the meeting was that world leaders and their close entourage would stay and meet for two days at Kananaskis Village, 90 km west of Calgary. This would total about 450 people. The remainder of the potentially large support delegation – possibly up to 800 people for each of USA and Japan, would stay in Calgary or other small communities such as Banff. Also, the main media headquarters to accommodate 2500 international and Canadian media representatives would operate from the Calgary Convention Center.

The security arrangements involved about 4000 Department of National Defence (DND) soldiers with battle ready equipment, and about 3000 Royal Canadian Mounted Police (RCMP) officers with peace keeping and riot enforcement capability. The Calgary Police Service would be responsible, with the assistance of the RCMP, for law and order in the City of Calgary. Eventually this amounted to the largest peacetime security operation ever undertaken in Canada.

In view of the local, and worldwide concern for environmental protection, for the first time ever, a Director of Environmental Affairs was appointed to participate in planning the G8 Summit 2002. This was one of 13 directorates required to prepare for and undertake the meeting. DFAIT was the lead Responsible Authority for ensuring compliance with the Canadian Environmental Assessment Act (CEA Act). Early in the program it was determined that DFAIT would prepare a Strategic Environmental Assessment of the overall project. This served to identify sensitive species, spaces and times and to inform all other planning. Subsequently DND and RCMP would prepare individual site and activity environmental screenings for their individual projects. Most of these assessments were not available for public review as they dealt with secret security issue projects. Many other federal departments were involved, but in the normal conduct of their mandated duties, did not trigger the CEA Act. Several of the projects – such as the installation of a new fibre-optic communication line

were highly visible, and treated in an EA review fashion normally employed by Parks Canada Agency.

### ***Approach to Incorporate Sustainable Development Concepts***

The G8 Kananaskis 2002 Summit environmental program had five major components:

1. Environmental Planning and Impact Assessment
2. EnviroSafe Training
3. Green Meetings
4. Outreach and Consultation – Envirostakeholders
5. Environmental Legacy

The approach to achieve sustainable development was to establish goals based on the natural and social values of the area, technology, and best management practices. The G8 Environmental Affairs Directorate prepared these goals and accompanying operational techniques, with the help of many others. After approval by the Executive Director, G8 staff – about 350 members, were individually informed and trained regarding their personal responsibilities to make good stewardship choices in preparation for a Green Meeting. Some of this material is attached, more is available upon request. An intense training program called EnviroSafe was devised to train soldiers and officers who had outdoor duties in Kananaskis Country. Several thousand personnel were instructed about how to conduct their work in a manner that kept them safe from harm by natural hazards, and conversely, how to safeguard the environment from their presence and activities. The public stakeholder outreach program presented G8's stewardship commitment, strategies and techniques by way of dozens of lectures, a G8 website and a monthly news publication mailed to 33,000 addresses.

DND already had well established sustainable development protocols in virtually every aspect of their work. The new challenge for DND was the highly sensitive location of the operation, oversight of the G8 Director of Environmental Affairs, and public and media scrutiny. DND appointed a full time environmental affairs officer to direct their environmental program, and engaged Public Works and Government Services Canada to conduct many of the site screenings. Much of the environmental planning, impact assessment and sustainable development was new territory for RCMP. They too appointed a full time environmental affairs officer who very capably guided RCMP activities with sensitivity for stewardship values. The City of Calgary Environment Department prepared an environmental protection plan for sites and services that could be under threat should demonstration or terrorist incidents occur.

### ***Sustainable Development Benefits Derived***

Both tangible and intangible benefits were realized from the environmental planning, environmental assessment and sustainable development techniques employed for the G8 Kananaskis 2002 Summit.



- the natural and social environment of Kananaskis Country was protected – there is virtually no residual evidence the meeting ever took place
- Canada defined a new international benchmark in holding “Green Meetings”
- consumption of resources was reduced through stewardship techniques
- hundreds of public service employees, contractors and service providers now have an informed awareness of their responsibilities and options for wise stewardship choices in their lives and work
- locally, there is a new public perception of what environmental planning and sustainable development should and can be
- the G8 Legacy project will directly benefit the environmental integrity of Kananaskis Country and will endure for many decades

### ***Barriers and Challenges***

There were no outstanding barriers to achievement of sustainable development in the case of the G8 Kananaskis 2002 Summit. The following points that did arise are worthy of comment however:

- in the final analysis several goals were slightly compromised by human exigencies, eg. at the last instant one private operator refused to sort recyclables without increased compensation, union challenges, jurisdictional posturing, and promotion of personal advocacy
- in hindsight, the G8 Environmental Affairs Directorate should have had five or six staff, not three
- relentless effort to obstruct and criticize by public individuals pursuing personal advocacy goals. Media pandered to these situations.

### ***Lessons Learned***

1. It is critical the executive staff of the project proponent have an informed commitment to environmental stewardship and sustainable development. The strength of this commitment must endure and frequently be renewed with subordinate staff and co-operators
2. The environmental planning, impact assessment and preparation for sustainable development must start early in the project planning process.
3. An experienced, technically skilled staff with good communication capabilities is essential. Reasonableness and good judgement are paramount
4. Outreach and information sharing are elemental to gain trust and confidence with sceptical stakeholders
5. An effective communications and media management plan is essential.

For further details about environmental planning, environmental assessment and sustainable development for the Kananaskis 2002 G8 Summit contact Dr. Bruce F. Leeson, Director Environmental Affairs Kananaskis 2002 G8 Summit at [bruce.leeson@pc.gc.ca](mailto:bruce.leeson@pc.gc.ca) or (403) 292-4438.

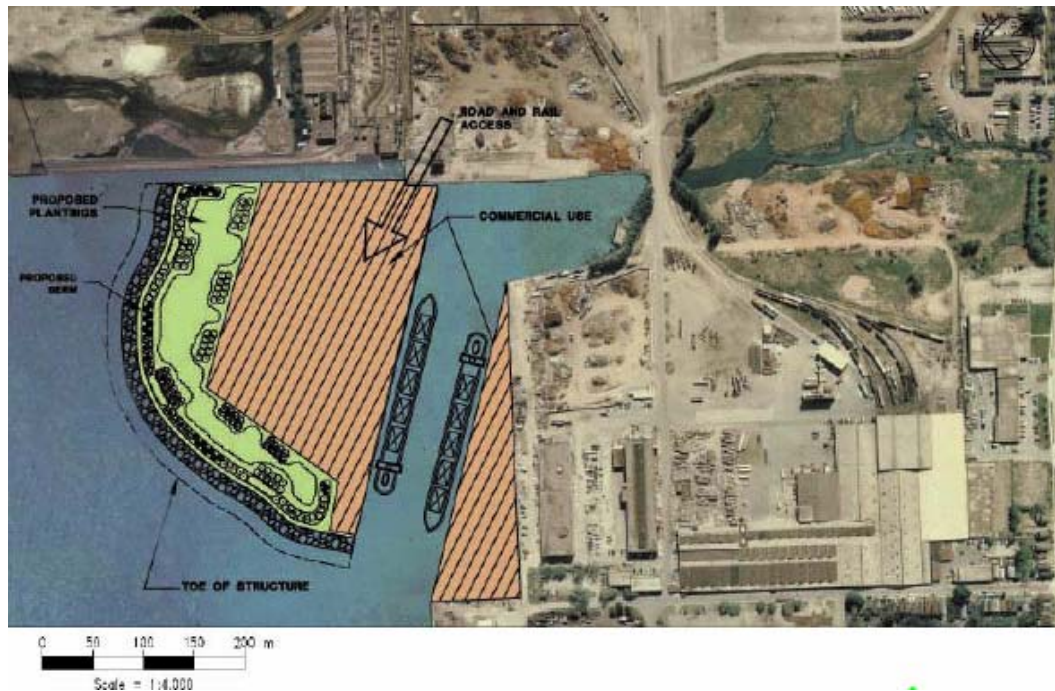
**Randall Reef Sediment Remediation – Sheila Allan (Environment Canada)*****Background***

Randle Reef is located in Hamilton Harbour at the west end of Lake Ontario and is considered to be one of the more complex and highly contaminated sediment sites in the Great Lakes. Randle Reef sediments contain polynuclear aromatic hydrocarbons (PAHs) in very high concentrations, primarily due to historical inputs of coal tar. The physical characteristics of the site are such that it has the highest potential for re-circulation of contaminants along the south shore of Hamilton Harbour. It is known that the PAHs are re-circulating and moving up into the food chain. This site is a priority for remediation in the Hamilton Harbour Remedial Action Plan (RAP) identified under the Great Lakes Water Quality Agreement and under the Canada-Ontario Agreement Respecting the Great Lakes Basin.

***The Project***

The proposed solution to managing Randle Reef is to construct an inwater containment facility to isolate and cover the majority of the most highly PAH contaminated sediments with the eventual outcome of a dry cap. The capped containment facility would be approximately 9.5 ha in size. It would contain and cover approximately 640,000 m<sup>3</sup> of acutely toxic sediments at the Randle Reef site and from other areas of the Harbour.

Upon completion, the capped containment facility would be a peninsula connected to port lands. The proposed end use of this constructed peninsula would be a combination of 2/3 port activities and 1/3 naturalized open space. Its configuration would include a shipping channel to maintain vessel access within this area of the Harbour and would provide for commercial storage and docking. Because the new channel must be suitable for vessels in excess of 25,000 dry weight tonnage (DWT), the project is subject to a comprehensive study as per section 28(c) of the Comprehensive Study List.



### *The Proponents*

Environment Canada, together with the Hamilton Port Authority and the Ontario Ministry of the Environment, is proposing the project. Environment Canada is also considering partnership funding. The project triggers assessment under the *Canadian Environmental Assessment Act* (CEAA) because of federal proponentcy, federal funding and requirements for authorization under the *Fisheries Act* and the *Navigable Waters Protection Act*.

The project environmental assessment (EA) commenced in 1995 when approximately twenty alternatives were considered involving any or a combination of sediment containment, removal, reuse, treatment and disposal. Since that time, it was recognized that a comprehensive study may be required, depending on the preferred option selected. The comprehensive study track was not confirmed until the multi-use containment facility was proposed as the preferred alternative at the Randle Reef project Public Advisory Group meeting in December 2002.

Since 1995, there has been considerable input from stakeholders and agencies regarding the management of Randle Reef sediment. Key issues and concerns related to the various alternatives are:

Do nothing:

- Continued risk of exposure to contaminants
- Migration of contaminants within the harbour

**Removal from harbour:**

- High cost (with or without treatment)
- Duration and uncertainty of treatment technologies
- Risk of exposure to contaminants during removal, treatment, transportation and following disposal
- Lack of disposal sites for “treated” sediment (Not in My Backyard)
- Disposal without treatment is not “removing” contaminants from environment
- Lack of funding partnerships

**Removal, “conditioning” and reuse as sinter plant feedstock**

- Health risk to steelworkers
- Effects of emissions on downwind communities
- Contrary to toxics virtual elimination policies

***In-situ* containment:**

- Inconsistency with RAP objectives of no further infilling
- Disruption of harbour uses
- Loss of fish habitat
- Poor aesthetics

The above concerns with these various options resulted in barriers to those going ahead with a preferred approach.

***The Sustainable Development Approach***

In November 2001, Environment Canada, as the project lead, formed a multi-stakeholder Project Advisory Group (PAG) consisting of key representatives of 17 participating organizations to develop a mutually acceptable solution to managing Randle Reef sediments. The stakeholders represented varied interests including those of federal, provincial and municipal government, industry, shipping, local citizens, ENGOs, workers’ safety, and technical experts. These key representatives brought the interests of their constituencies to a series of PAG meetings and relayed the outcomes to their groups. An approach toward sustainable development was taken through information exchange, negotiation and compromise to satisfy the wide range of stakeholder interests. These included aquatic ecosystem restoration, human health and safety, economic opportunities, navigation, aesthetics, timeliness, affordability and long term sustainability. The PAG followed a democratic process whereby all members were given an equal voice to express their interests and to vote on project alternatives.

***Benefits of a Sustainable Development Approach***

Stakeholders were able to reach consensus on a solution that had been ruled out during earlier phases of the EA. While most maintained their preference that the contaminated sediments be removed from the Harbour, they accepted that isolating and containing the sediments within the Harbour would

eliminate the health and environmental risks associated with removal. Stakeholders also recognized that engagement of other partners in a multi-use facility would enable the project to remediate a larger area and best meet the shared objective of “a whole harbour solution”. Without additional partnerships, remediation would be focused on a smaller zone of contamination and there would still be a large volume of PAH contaminated sediment in the Harbour following the project.

### ***Lessons to Share***

The elements of sustainable development can be introduced early into the EA process by forming a properly representative stakeholder advisory group as soon as possible. While the Responsible Authority (RA) coordinates the discussions, it is the collective input from the advisory group and the parties they represent that defines sustainability.

A shared project objective statement that embodies sustainable development helps stakeholders to maintain this focus as new issues and conflicting interests arise.

Proponents should be prepared to do several road shows to present the information to stakeholder groups on their own turf, to extend consultation beyond the advisory group and also to allow communication that might otherwise be fettered by the presence of individuals with opposing interests.

RAs must be prepared to deal with non-program issues; which, in this case included worker safety, economic opportunities, cultural values, aesthetics, politics and public perception.

New information, more effective public consultation and interest-based negotiations can lead to a 180 degree turnaround in opinion about a proposed alternative. Proponents, regulators and stakeholders may accept a solution that, although not ideal to them, is recognized by consensus as the most practicable alternative that will fulfill the project objectives.

**Vancouver Convention Centre Expansion Project – Keith Grady (Infrastructure Canada)**



## EA and Infrastructure Development: Opportunities for Advancing Sustainability

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Vancouver Convention Centre  
Expansion Project



### Overview

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- Background: EA, sustainability and infrastructure development.
- Case Study: Vancouver Convention Centre Expansion Project.
- Challenges and Lessons Learned



## Infrastructure Canada

- Departmental Overview
- Funding Programs: CSIF, MRIF, BIF
- Project Categories and Examples
- EA Implications
- Sustainability agenda: Leveraging federal green policies
- Q: Can INFC SD objectives be achieved through EA?



## Case Study: Vancouver Convention Centre Expansion Project (VCCEP)

- New 68,000 m<sup>2</sup> facility on 4.6 ha on Burrard Inlet next to Canada Place
- Construction cost - \$600M/\$200M federal share
- Federal & BC “showcase” project
- EA Requirement:
  - CEAA screening: INFC, F&O, VPA
  - Harmonized EA lead by BC Environmental Assessment Office



## VCCEP: EA and Sustainability

- Main issues
  - EA - Fisheries, effect of environment on project (sea level, wave, seismic)
  - SD – Green building (siting, materials, design, construction, operation)
- Sustainability review objective
  - Ensure building meets “state of the art” sustainability objectives in 2008



## VCCEP: EA and Sustainability

- Sustainability review process
  - Stakeholder expert advisory committee
  - White paper -define issues, describe best practices, promote dialogue
  - Design charrettes with advisory committee, design team, tenants
  - Expect use of LEED review framework augmented with project specific metrics
  - Target completion in Spring 2004 with PWGSC report on project acceptability



## VCCEP: EA and Sustainability

- Focus of Sustainability Review
  - Site sustainability (erosion control, density, brownfield, access, stormwater management, etc.)
  - Water efficiency (landscaping, wastewater management technology, conservation)
  - Energy and atmosphere (energy performance, ozone depletion, green power)



## VCCEP: EA and Sustainability

- Focus of Sustainability Review
  - Materials and resources (recyclables, reuse, waste management, local/regional source, certified wood, etc.)
  - Indoor environmental quality (low-emitting materials, ventilation, chemical and pollutant source control, lighting, etc.)
  - Innovation in Design





## VCCEP: EA and Sustainability

- Factors influencing decision to proceed with sustainability review outside EA
  - Stakeholder views – BC EAO, proponent
  - Differences in factors to be considered, processes, tools and players
  - Differences in perspective – minimizing adverse effects vs. maximizing environmental benefits
  - Linked EA/SR processes adequate



## Some Challenges

- Scoping “sustainability” issues
- Determining the review process
- Finding appropriate tools, benchmarks
- Documenting the review and findings
- Deciding how hard to push



## Lessons Learned

- Broad interest in sustainability but need to accommodate stakeholder motives
- Need
  - An approach based on consensus around shared interests
  - A facilitator, driver or champion
  - Flexibility to design process to fit circumstances – issues, players, tools, etc.
  - Early start to flag issues, players, etc.
  - To understand the larger picture



## Conclusions

- Sustainability is more than bricks and mortar, but INFC project funding can promote it
- Can INFC SD objectives be realized through federal EAs.....

## **740 Bel-Air Building Reconstruction – Isabelle Roy (Public Works and Government Services Canada)**

### ***History***

The 740 Bel Air in Montreal is a federal building which knew two main phases of construction, a first phase around 1851 and a second phase stretching from 1903 to 1949. The buildings were occupied from 1851 until 1949 by a company which specialized in the manufacture of cast parts and railway equipment. The complex was bought by the Department of National Defence (DND) in 1949 which used it to house the militia, for vehicle maintenance, training and transport related activities, as a garage and electricity shop. In 1949, there were 10 buildings on the site which, since 1977, only had 8. The property was transferred to Public Works and Government Services Canada (PWGSC) in 1971. It's a non-heritage asset.

Before its demolition, the 740 Bel Air added up to 10,069 m<sup>2</sup> (83% storage, 17% office) on a 10,402 m<sup>2</sup> area, very close to Montreal's downtown. The space was occupied by the Royal Canadian Mounted Police (RCMP) and Human Resources Development Canada (HRDC). Approximately 1,597 m<sup>2</sup> of space were vacant and unusable without major investments.

### ***Project Description***

The project was to be completed in 2 phases. The first consisted in the deconstruction of the existing buildings and recovering the maximum of solid waste and to decontaminate the site then. According to geotechnics studies, due to the previous activities of the foundry, a metal and hydrocarbon contamination PAH was present in the ground. Work was completed in the fall of 2003.

The second phase corresponds to the construction of the new building. The design of the new building takes into account the criteria of the program LEAD. The Silver level is aimed for the program. The new building will serve as a storage and training facility for 4 ministries: Canada Customs and Revenue Agency (CCRA), DND, HRDC and the RCMP. The usable space will be 13,300 m<sup>2</sup>. Work will start in the spring of 2004.

### ***Sustainable development***

From the beginning, the project management team was committed to respect the Sustainable Development Strategy (SDS) set forth by PWGSC. The SDS identifies several objectives in relation to a sound management of waste, water and energy conservation and with the problems of greenhouse effects.

At the time of the deconstruction, special clauses were identified in the estimate for the contractor, which made it possible to recover 100% of the concrete slabs, metals and structural steel reinforcements, 35% of the concrete blocks and 92% of bricks and wood. Approximately

9 000 metric tons of solid wastes were recovered. The materials not recovered were contaminated with lead paint.

At the time of decontamination, in order to reduce the volume to be laid out, the grounds were filtered beforehand to remove the rocks and other large blocks. Thereafter, a characterization by piles was carried out in order to send the soil to the best possible place. A total of 28 000 tons of contaminated soil was excavated and sent to authorized places. The threshold of quality of the soil after decontamination corresponded to level A of the Soil Protection and Contaminated Sites Rehabilitation Policy of the contaminated sites of Quebec. The building also contained asbestos, equipment with BPC, lead-containing paint and other dangerous material. All that material was removed and laid out.

Still from an SDS perspective, the architects received as mandate to provide a sustainable development concept for the new building. According to the plans and specifications, the building will have the following characteristics among others:

- Use of geothermic as a source of heat and air-conditioning
- Use of solar energy for domestic hot water
- Use of natural ventilation for the introduction of air
- Presence of green roof to reduce the variations in temperature in the building and to collect rainwater
- Recovery of rain water in basins for the bathrooms (sinks and toilets)
- Installation of a run-off system to control the flow of excess rainwater in the wastewater system of the city

The use of geothermics will avoid producing approximately 300 metric tons of CO<sub>2</sub> per annum. With an energy saving from 30 to 40% per year comparatively at a similar building, the return on the investment is planned for 9 years.

### ***Obstacles and challenges***

Since the environmental assessment (EA) team was involve in the project from the beginning, there were no obstacles to the integration of sustainable development and environmental assessment. This integration made it possible to establish an honest communication and an exchange of ideas. EA allowed the project management team to confirm the environmental choices made, when several options were available. The sustainable development objectives also made it possible for environmental assessment to broaden the scope and include non-valued components at the beginning, by considering the community within the spatial and the larger temporal boundaries.

The following are some examples of integrated development and environmental assessment:

### ***Contaminated soil management***

Given the size of the property and the number of buildings on it, the quantity of solid waste and contaminated soil to manage became important. In order to reduce the pressures on the waste disposal sites, construction waste was recovered to the maximum, as much as possible and the contaminated soils sorted.

Environmental assessment made it possible to confirm that the method of segregation of the soils would have little impact on the quality of life in the neighbourhood (noise and transport) and had laid down certain rules for the protection of the environment. The valued component was mainly the ground.

The objective to reduce the pressure on the waste disposal sites had a positive impact on the ground and surface water that could come in contact with these sites. The project, being of local scale, will thus have a larger impact at the community level, and another component (surface water) thus becomes a valued component within the scope of the initial assessment.

### ***Geothermics***

The most economical and realistic geothermics method from a technical point of view as determined by the project management team was the system of closed vertical loop. Pipes passing in some conduit structures at some 137 meters in depth, where methanol, liquid coolant, will be cooled or heated by the temperature of the ground according to needs. Approximately 140 liters of methanol will be necessary to supply the system.

Environmental assessment made it possible to determine that this system was the best possible choice from the point of view of the environment under existing conditions. The urban environment does not allow the use of a horizontal system which would require a larger surface and would be more sensitive to the accidents (pipes being hidden at a lower depth). The closed system is safer than an open one, which uses underground water as heat transfer agents. By avoiding the use of underground water, this technique will have a weak impact on the change of temperature of the ground and will decrease the risks of contamination of the ground water table. The valued components were mainly the ground and underground water.

Methanol is also a good environmental choice. Not toxic according to the WHMIS, it is not resilient, breaks up easily by ground bacteria and is without effect for the PVC tubing. The risk of leakage is thus limited.

The objective to reduce the production of CO<sub>2</sub> will have a positive impact in the fight against greenhouse effects. The project, of local scale, will thus have a greater spatial limit at the community level, and another component (air) becomes also a valued component in the preliminary scope of the project.

***Lessons learned***

The SDS is a practical tool for project managers who were able to establish precise sustainable development objectives. Achieving sustainable development objectives has been measured in relation to the risk of negative impacts on the components of the environment. The sustainable development objectives allowed the EA to include new valued components and to broaden the spatial boundaries. The integration of the EA team early in the process made it possible to establish a common work structure, the common goal of the two approaches being proactive for the environment.

## **TransCanada Highway Twinning in Banff National Park – Bruce Leeson (Parks Canada)**

### ***Background***

The TransCanada Highway (TCH), stretching across Canada from St. John's Newfoundland to Victoria BC, is one of the world's longest continuously numbered roadways. Its 7500 km of length is considered a unifying national entity, and it is a powerful economic factor in the Canadian economy. The federal government is responsible for the construction and upkeep of those sections of the roadway on federal lands. The longest such continuous stretch is in the Mountain National Parks – Banff National Park in Alberta and continuing through Yoho National Park in British Columbia. Most of the TCH is twinned (four lanes) between Winnipeg, Manitoba and Calgary, Alberta. Primarily due to the formidable rugged terrain, little of the TCH is twinned through the mountains between Calgary and Vancouver. During the early 1970's the inadequacy of the TCH through Banff National Park to handle the recreational, trucking and local traffic became pressing. Planning for upgrading the TCH in Banff National Park sparked a controversy that endures to this day.

Traffic growth in the 1970's caused long queues, frequent vehicle crashes and pressure to relieve the worsening bottleneck for the commercial trucking industry between Vancouver and Calgary. Wildlife mortality on the TCH was so extreme the highway was locally named the "meatmaker" by Parks Canada staff. Planning through the mid '70's eventually culminated in one of the first ever EA Panels, in 1979. Intense debate and study focused on the acceptability of a "freeway" through Canada's first national park, the opportunity for an alternative route, and the predicted adverse environmental impact of constructing and operating such a highway in an internationally acclaimed protected area. The final outcome of the panel was the approval of the project, subject to exceptional measures to avoid, mitigate and manage the potential adverse environmental effects. The words "sustainable development" were not part of the lexicon of environmental planning in the 1970's.

Construction of Phase I, Banff east gate to the town of Banff – 13 km, began in late fall of 1979. Before Phase I was completed, Phase II – km 13 to km 27, was brought forward, also to be the subject of a second Federal Environmental Assessment Review panel. Public Works Canada was the federal project proponent for Phases I and II. With approval in 1984, construction continued to an interim conclusion in 1987. Following a budget interruption between 1990 and 1995, no further upgrades took place until increasing human fatalities and worsening travel conditions compelled continuance of the twinning project. At that point the Summer Average Daily Traffic (SADT) was 22,000 with a level of service approaching level D – a seriously under-capacity situation. Instantaneous SADT between 10:30 hrs and 16:30 hrs in July and August would equal an SADT of 35,000 vehicles – a virtual coloured wall of high speed metal. Approval for Phase IIIA was gained without the necessity of a formal Panel review, even though the assessment report and public consultation was nearly equal in intensity. Budget authorities now placed Parks Canada as the Responsible Authority for the TCH twinning project. Again, the phrase "sustainable development" was not part of the language, although all the elements of present day sustainable development concepts were present.

A unique aspect of the TCH twinning project in Banff's Bow Valley is the wildlife defences. The Bow River Valley is a rich Montane environment, home to 12 species of large animals, and hundreds of species of small animals, birds and plants. This environment has been evolving for 10,000 years, and has come under increasingly disruptive pressure from humankind in the past century. To resolve the worsening problem of wildlife collisions on the TCH, a 2.4 m high fence was erected on both sides of the highway. Twenty-two underpasses and two overpasses have been constructed to provide for habitat connectivity. Best management practices and innovative technology have been used throughout to avoid impact, restore native vegetation, respect prehistoric values, conduct monitoring and follow-up. At this point \$85 million has been spent in upgrading the TCH in Banff National Park. The environmental component of the budget has progressively increased – 16% of Phase I, 20% of Phase II and 30% of Phase IIIA budgets.

The wildlife defences have been controversial, with criticism ranging from an unnecessary waste of funds, to other extremists claiming they don't function adequately because they are too minimal. Parks Canada has undertaken intensive, third party studies to monitor the effectiveness of the works. Elk/vehicle collisions declined 96% following the installation of the fences, and collisions for all species combined reduced by 82%. Between fall of 1996 and summer of 2003, 50,000 passages of animals coyote size and larger were recorded passing through or over the crossing structures. Every species of animal normally present in the valley bottom has been recorded to use the crossing structures. A great deal has been learned about design and management of wildlife crossing structures. About a dozen Masters and PhD graduate degrees have been gained as a result of studying these works. Hundreds of international visitors and conference delegates engaged in transportation planning and wildlife management have come to see and receive explanations about the wildlife defence features. The project is considered a world leader in the business of constructing major roadways in protected areas, especially for the wildlife protection elements.

Now in October 2003, Infrastructure Canada announced a \$50 million budget to resume upgrading the TCH – Phase IIIB, through Banff National Park. Parks Canada will be the Responsible Authority and Federal Environmental Assessment Coordinator. The project will be assessed at the Environmental Screening level, although the intensity of investigation, environmental planning, impact assessment and stakeholder consultation will exceed the expectations of Comprehensive Study.

### ***Approach to Sustainable Development***

Parks Canada will employ all contemporary expectations of sustainable development in planning for TCH Phase IIIB. All traditional aspects of large, linear project planning will be pursued – wildlife, vegetation, hydrology and watershed, archaeological and cultural values, etc. Also, new concepts of continental wildlife habitat connectivity – Y2Y, connectivity for biological integrity and genetic diversity, critical mass population topics, etc. will be investigated. The outreach, communication and consultation will be extensive. There are many stakeholders with a wide variety of views about the



need for, propriety of, methods to employ, and urgency of the project. The people interaction element of planning and assessing the project is likely to be more demanding than the environmental science or engineering design components. There will be early scoping exercises, draft terms of reference, ongoing advisory committees at several levels; environmental, engineering and design, and consultation and communication subcommittees; draft reports and project designs, revised reports. This exercise has now begun and will proceed through to a determination in fall 2004.

### ***Barriers and Challenges***

In recent weeks following the announcement of the resumed TCH upgrading project several stakeholders have proclaimed their viewpoint about the future undertaking. Repeated media comment reveals the expectation that what will be accomplished greatly exceeds the funds available – this will lead to disappointment, frustration and competition for favoured locations or elements of improvement. Perennial critics who appear to have adopted the TCH as their hobby have reemerged, claiming the existing wildlife defences don't work. In their view, extended lengths of elevated highway are mandatory for wildlife benefit – apparently with little concern for the reality that one km of elevated highway would consume most of the total budget – \$30 - \$40 million. Again – pitting advocacy interests against the basic goals of the project.

Others will lobby for a speed reduction strategy, at the same time when most of the traveling public and commercial carriers want to go faster. These arguments will juxtapose against the reality that Calgary has become an inland supply and distribution hub for manufactured products arriving from the Pacific Rim and elsewhere through the port of Vancouver. Minimum-hold-time warehousing and just-in-time delivery are billion dollar competitive marketing strategies relying on efficient and safe truck and train transportation between Calgary and Vancouver. On the other hand, there will be a legitimately strongly held expectation that Canada will safeguard the ecological integrity of Canada's first national park, a World Heritage Site, international icon of Canada's wilderness identity, and engine of a multimillion dollar tourist economy in Alberta. The stakes are high – 9 million people arrive in the Bow Valley in Banff every year – 4.5 million to visit Banff and another 5 million passing through between Calgary and interior BC or on to Vancouver. Virtually all these travelers arrive by way of the TCH. In the past four years twenty-four people have died on the stretch of TCH now up for twinning consideration. Four grizzly bears have died at Lake Louise – two on the TCH and two on the rail tracks. Annual TCH traffic growth in recent years holds steady at about 2.5%

### ***Lessons (To Be Learned)***

1. It will be critical for Parks Canada Agency to clearly explain the already established prioritized goals of the project – A. to improve traveler's safety on the TCH, B. to improve wildlife and ecological integrity as it relates to the TCH, and C. to reduce the economic bottleneck emerging on the TCH. It likely will be necessary to repeat these goals many times
2. It will be important to bring stakeholder expectations in line with resources, and establish a realistic preparedness to prioritize.

3. Real environmental science must not be held captive by ideology, rhetoric and advocacy. This is unlikely to be completely successful, but in the final analysis, good judgment will prevail.
4. Parks Canada Agency must be prepared to engage in more extensive communication and consultation than normal in order to bring the TCH planning and assessment exercise to a defensible determination.

For further information about the TCH Twinning project in Banff National Park contact Dr. Bruce F. Leeson – Senior Environmental Assessment Scientist at [bruce.leeson@pc.gc.ca](mailto:bruce.leeson@pc.gc.ca) or (403) 292-4438.