ENVIRONMENTAL IMPACT ASSESSMENT AND THE PROMISE OF ECO-PRAGMATISM: A CONSIDERATION OF THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

by

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ABSTRACT

Because of the potential for development to have negative environmental impacts, one of the most important questions addressed by environmental law and policy is whether and how to allow development to proceed. In Canada this question is answered primarily through environmental impact assessment ("EIA"). At the federal level, EIAs are required under the Canadian Environmental Assessment Act, S.C. 1992, c. 37 ("CEAA") for certain types of proposed projects and activities. Although CEAA's purposes include fostering both a healthy environment and economy, the Act does not provide any instruction on how to balance or choose between these goals in situations where both goals cannot be served. In 1999 Professor Daniel Farber developed a methodology he refers to as 'eco-pragmatism' in an attempt to create a means by which society's competing (and often contrary) values can be balanced and satisfactory trade-offs arrived at. In this thesis the differences between CEAA and eco-pragmatism are explored and consideration is given to whether eco-pragmatism might assist in resolving the value conflicts that often characterize EIAs. Of particular interest is whether Farber's approach might improve the CEAA framework and assist CEAA decision-makers in determining whether proposed projects should be approved. It is argued that although eco-pragmatism is useful, it is not adequate if the ultimate goal is environmental protection that is sustainable into the future. Both CEAA and eco-pragmatism focus on the mitigation of negative environmental effects, rather than on achieving long-term environmental gains or observing a minimum environmental standard. Accordingly, both arguably have the effect of slowing the erosion of environmental quality, but each fails to observe some sort of environmental 'bottom line' that would impose an ultimate limit on negative impact. It is suggested that an ultimate limit is a necessary (albeit difficult) element of environmental law.
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<td><em>Canadian Environment Assessment Act</em></td>
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<tr>
<td>COSEWIC</td>
<td>Committee on the Status of Endangered Wildlife in Canada</td>
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<td>DFO</td>
<td>Fisheries and Oceans Canada</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>HMP</td>
<td>Highwood River Basin Water Management Plan</td>
<td>69</td>
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<td>IFN</td>
<td>Instream flow need</td>
<td>58</td>
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<tr>
<td>IFO</td>
<td>Instream flow objectives</td>
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<td>NRCB</td>
<td>Natural Resources Conservation Board</td>
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<td>NRCBA</td>
<td><em>Natural Resources Conservation Board Act</em></td>
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<tr>
<td>PAC</td>
<td>Public Advisory Committee</td>
<td>90</td>
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<tr>
<td>SEA</td>
<td>Strategic Environmental Assessment</td>
<td>24</td>
</tr>
<tr>
<td>TCP</td>
<td>Three-component Project</td>
<td>60</td>
</tr>
<tr>
<td>TSC</td>
<td>Technical Sub-Committee</td>
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To my parents...
INTRODUCTION

Because of the potential for development to have negative environmental impacts, one of the most important questions addressed by environmental policy and law is whether and how to allow development to proceed. In Canada this question is answered primarily through environmental impact assessment ("EIA"). EIA can be described in general terms as a process of decision-making that involves gathering information and considering in advance the anticipated environmental impacts of a particular undertaking. At the federal level, EIAs are required under the Canadian Environmental Assessment Act\(^1\) ("CEAA") for certain types of proposed projects and activities. Although CEAA’s purposes include fostering both a healthy environment and economy,\(^2\) the Act does not provide any instruction on how to balance or choose between these goals in situations where both goals cannot be served. As a consequence, EIAs undertaken pursuant to the Act can result in conflict between what has been called “the traditional adversaries in environmental matters – property rights and non-use environmental values”\(^3\).

In 1999 Daniel Farber developed a methodology he refers to as “eco-pragmatism” to address this type of conflict.\(^4\) In essence, Farber presents a framework for analyzing and making environmental decisions that is rooted in the philosophy of pragmatism. Farber argues that his eco-pragmatic approach is suitable when considering “discrete actions”, such as “controlling a specific pollutant or approving a development project”, but not as useful when attempting to “work out long-term environmental policy in a more holistic way”.\(^5\) According to Farber, eco-pragmatism itself cannot solve environmental

\(^1\) S.C. 1992, c. 37 [hereinafter “CEAA”].
\(^2\) See ibid., s. 4(1)(b).
problems, but it can foster a legal context that is conducive to solving these types of problems.  

Through his eco-pragmatic approach, Farber is attempting to address what are arguably the most challenging issues in environmental law and policy. He is seeking a means by which society's competing (and often contrary) values can be balanced and satisfactory trade-offs arrived at. At some point, argues Farber, the costs of protecting the environment outweigh the benefits— it is where the line should be drawn that proves difficult. Farber states that there is no formulaic way to draw the line, but the approach to making environmental decisions cannot be entirely _ad hoc_ as there needs to be some coherent policy and uniformity of decision-making.

In this thesis the differences between CEAA and eco-pragmatism are explored and consideration is given to whether eco-pragmatism might assist in resolving the value conflicts that often characterize EIAs.  

1996 should be recommended for approval (the “Highwood Decision”)\(^8\). This decision was chosen because it involves a significant and complex project and it was decided that certain aspects of the undertaking should be approved while elements should not. In Chapter 5, CEAA and eco-pragmatism are compared. Chapter 5 also includes an application of the eco-pragmatic methodology to the facts of the Highwood Decision. This comparison and application reveal some of the strengths and limitations of each approach. Chapter 6 provides a brief summary of the conclusions reached.

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2. THEORETICAL FRAMEWORK

2.1 Philosophical Roots

As introduced above, "eco-pragmatism" is the methodology developed by Farber in his 1999 book of the same name. Farber's method has been described as approaching "theory-building" as "a new decision making philosophy for environmental law" and as a possible new "paradigm for the next generation of environmental law". In essence, Farber presents a framework for analyzing and making environmental decisions in the context of uncertainty that is based on the philosophy of pragmatism. In his book Farber does not explain philosophic pragmatism or environmental pragmatism in any detail. Each of these concepts is however introduced briefly below in order to place eco-pragmatism within its philosophical context and to explore the foundations of Farber's methodology. Following this introduction, eco-pragmatism is outlined.

2.1.1 Pragmatism

Philosophic pragmatism appeared at the end of the nineteenth century and "was initially intended to provide an alternative to foundationalism, i.e., the view that there are innate and indubitable beliefs upon which knowledge must be based". Mintz explains that philosophical pragmatism is an "attitude or method of thought" that is focused on facts and consequences, rather than theories and principles, and is characterized by an "experiential, provisional, and pluralistic notion of truth". Instead of concerning itself with theoretical constructs, pragmatism is a flexible philosophy that "relies on action, 

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9 See supra note 4.
10 A.C. Flournoy, "In Search of an Environmental Ethic" (2003) 28 Colum. J. Envtl. L. 63 at 95 [hereinafter "In Search of an Environmental Ethic"].
14 Ibid. at 3.
experimentation and workable solutions". The flexibility inherent in this approach flows from the general proposition that human knowledge is limited and, as societies learn more, ethical questions and concerns change. Accordingly, rather than resort to dogma to answer ethical questions or resolve disputes, pragmatists continually experiment to find solutions that best serve individuals and their communities. Pragmatism's influence diminished beginning in the 1930s, but was revived in the 1960s. In the 1980s a number of legal scholars began to identify themselves as "legal pragmatists".

2.1.2 Environmental Pragmatism

Starting in the late 1980s, a group of philosophers and legal scholars began to apply pragmatism to issues of environmental ethics and questions concerning environmental law and policy. The product of this work, "environmental pragmatism", is not a single view, but encompasses "a cluster of related and overlapping concepts". Mintz observes that the various forms of environmental pragmatism share "a rejection of the view that 'adequate and workable environmental ethics must embrace non-anthropocentrism, holism, moral monism, and, perhaps, a commitment to some form of intrinsic value'". Accordingly, the search for meta-theory is abandoned in favour of moral pluralism, with an emphasis on identifying the compatible aspects of differing environmental theories. Because of these attributes, the pragmatic approach has been described as a means of reconciling conflicting "environmental theories, priorities and tactics". Hirokawa observes that by rejecting the idea that theory leads to solutions, pragmatic thinking allows one to focus on empirical

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15 Angelo, supra note 7 at 110.
16 Ibid. at 111.
18 Mintz, ibid. at 2.
19 Ibid. at 2.
20 Ibid.
21 A. Light & E. Katz, "Introduction: Environmental pragmatism and environmental ethics as contested terrain". in Environmental Pragmatism, supra note 17 at 5.
22 Mintz, supra note 13 at 6, citing ibid. at 2.
23 Mintz, ibid. at 19-20.
evidence and consider the consequences of a particular approach to environmental issues.\textsuperscript{24} It is this emphasis on consequences (e.g., the attainment of environmental goals) that provides disagreeing environmentalists with common ground.\textsuperscript{25}

Schroeder observes that unified theories are not attractive to pragmatists because they fail to accommodate “conflicting and incommensurable values”, which is what environmental policy-making demands.\textsuperscript{26} Moreover, efforts to develop meta-theory have failed. According to Norton,

... seeking a unified, monistic theory of environmental ethics represents a misguided mission, a mission that was formulated under a set of epistemological and moral assumptions that harks back to Descartes and Newton. An assessment of the contribution of environmental ethics to environmental policy in its first two decades is accordingly bleak. The search for a “Holy Grail” of unified theory in environmental values has not progressed towards any consensus regarding what inherent value in nature is, what objects have it, or what it means to have such value. Nor have environmental ethicists been able to offer useful practical advice by providing clear management directives regarding difficult and controversial problems in environmental planning and management [footnote omitted].\textsuperscript{27}

Other environmental pragmatists similarly view any attempt to “resolve ultimate philosophical issues” as futile.\textsuperscript{28}

By abandoning the search for a unified theory, environmental pragmatists are free to choose whatever philosophical framework bests supports the goals of environmental health and sustainability in any given situation – the “truth” (or the immutability or fixedness) of a particular theory is not important in practice.\textsuperscript{29} Pragmatists are not attempting to “accurately describe the world or uncover the values inhering in nature”.\textsuperscript{30} Rather, they discuss and assess human values by asking whether the value in question is “useful”, and

\begin{footnotes}
\item\textsuperscript{24} Hirokawa, \textit{supra} note 3 at 250.
\item\textsuperscript{25} Mintz, \textit{supra} note 13 at 20.
\item\textsuperscript{26} C.H. Schroeder, “Prophets, Priests, and Pragmatists” (2003) 97 Minn. L. Rev. 1065 at 1082-83.
\item\textsuperscript{27} B.G. Norton, “Integration or Reduction: Two approaches to environmental values” in \textit{Environmental Pragmatism, supra} note 17 at 106.
\item\textsuperscript{28} See D.A. Kysar and J. Salzman, “Environmental Tribalism” (2003) 97 Minn. L. Rev. 1099 at 1132 [hereinafter “Environmental Tribalism”].
\item\textsuperscript{29} Mintz, \textit{supra} note 13 at 9.
\item\textsuperscript{30} Hirokawa, \textit{supra} note 3 at 259.
\end{footnotes}
they consider a belief to be “true” when it is in fact useful.\textsuperscript{31} When gauging usefulness, environmental pragmatists tend to emphasize social justice.\textsuperscript{32}

According to Hirokawa, in order for environmental objectives to be attained, common ground must be found not only within environmental circles, but also within the greater community.\textsuperscript{33} The author argues that “environmental law … operates in the context of, and subject to, the pervasiveness of the property paradigm.”\textsuperscript{34} Hirokawa views pragmatism as a palatable middle ground for achieving changes that result in the desired outcome (\textit{i.e.}, improved environmental law) without requiring the substantial, and unlikely, shift away from the current property-based paradigm. Hirokawa argues that the usefulness of environmental pragmatism is in its methods of persuasion and its ability to work alongside the dominant paradigm. This ability, in Hirokawa’s view, is in contrast to the ineffectiveness of radical environmental critiques (such as ecofeminism and deep ecology) in achieving the incorporation of environmental ethics into law.\textsuperscript{35} To the pragmatist, “a theory is better when it is successful, and a theory is only successful when it finds its way into the law”.\textsuperscript{36}

2.1.3 Faber’s Pragmatism

Although pragmatism and environmental pragmatic thought are not discussed at length in \textit{Eco-pragmatism}, one can easily recognize that Farber’s work is grounded in these.\textsuperscript{37} Farber encourages persuasion and discussion, stating that he hopes to “advance the conversation” through his approach.\textsuperscript{38} Farber does not believe it “fruitful” to engage in a discussion about the fundamental nature of ethics in order to address specific environmental

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{31} Schroeder, \textit{supra} note 26 at 1092.
\item \textsuperscript{32} Mintz, \textit{supra} note 13 at 20.
\item \textsuperscript{33} See Hirokawa, \textit{supra} note 3.
\item \textsuperscript{34} \textit{Ibid.} at 233.
\item \textsuperscript{35} See \textit{ibid.} at 225-28.
\item \textsuperscript{36} \textit{Ibid.} at 259.
\item \textsuperscript{37} For a more complete discussion of how eco-pragmatism fits within pragmatism, see “Working Both Ends”, \textit{supra} note 11. Note that this thesis does not include a critique of Farber as an environmental pragmatist. For a critique of this nature, see L. Heinzerling, “Book Review: Pragmatists and Environmentalists” (2000) 113 Harv. L. Rev. 1421.
\item \textsuperscript{38} \textit{Eco-pragmatism}, \textit{supra} note 4 at 14.
\end{itemize}
\end{footnotesize}
issues. \footnote{See \textit{ibid.} at 40-41.} In other words, he does not think it is productive to try and answer Plato's question about the nature of "the good", and then use this answer to solve problems. Farber comments that it does not seem likely that we will be able to settle the question of "the good" any time soon. \footnote{\textit{Ibid.} at 40.} Similarly, Farber does not support the quest for "grand theories". Rather, he argues:

A convincing analysis should be like a web, drawing on the coherence of many sources, rather than a tower, built on a single unified foundation. Intelligent analysis requires the use of theories, but as tools, not as ends in themselves. Environmental decisions involve a complex network of scientific, economic, and normative judgments. It is unlikely that we can construct a structure in which all of these considerations will point to a single conclusion. We can have better hopes of building an interlocking web of arguments that will support a decision based on diverse, overlapping considerations. \footnote{\textit{Ibid.} at 10.}

Although he shows a willingness to employ any and all theories and take into account all considerations, Farber emphasizes that his form of pragmatism does not involve \textit{ad hoc} decision-making based on a balancing of factors. \footnote{\textit{Ibid.} at 93.} He argues that although such an approach might have appeal, because it appears unbiased and inclusive, it is an inadequate approach for setting environmental policy. \footnote{\textit{Ibid.} at 93-94.} According to Farber, although there is no mechanical way to answer difficult questions of environmental policy and law, there is a need for an analytic framework within which to make decisions. \footnote{\textit{Ibid.} at 10.} There is also a need for consistency and coherence in environmental policies and decisions over time. \footnote{\textit{Ibid.}} Farber's aim is to formulate an analytical framework within which competing and often contrary values can be balanced and satisfactory trade-offs arrived at. He is attempting to address the conflict between what Hirokawa has called "the traditional adversaries in environmental matters -- property rights and non-use environmental values". \footnote{Hirokawa, \textit{supra} note 3 at 227.}

Ruhl, for example, has observed that since the 1970s:
... two extreme and opposing philosophies – one devoted to protecting the economy and the other to protecting the environment – have waged a war of annihilation that has left in its wake the mish-mash of laws, regulations, judicial opinions, and countless administrative decisions and policies that we today call environmental law.  

Kysar and Salzmann have referred to this polarization as “environmental tribalism.”  

Schroeder, describing the two competing factions as “prophets” and “priests”, writes:

Crudely put, priests seek to optimize pollution, are relatively indifferent to the impact of human alterations of the environment on nonhuman things (save those providing feedback that affects the satisfaction of human wants), discount (literally) the interests of future generations and do not think there are limits to growth. Prophets seek to minimize pollution, care about human impacts on nonhuman things, worry about future generations, and believe there are limits to growth. These different convictions motivate different environmental objectives, different senses of urgency, different assessments of trade-offs with other values, and so on.  

Farber characterizes this conflict generally as a dispute “over the legitimacy of the market-based method [i.e., cost-benefit analysis] as a mechanism for social choice”. In other words, he views the dispute as being over whether the market or politics is the best indicator of what humans desire. Farber argues that “[i]n reality, both politics and markets [our primary methods of making decisions] express the values of the public, and both sources of information about societal values deserve consideration in formulating public policy”. He writes:

If we are to evolve a vision of environmental law fit for our society, we must recognize that we are deeply committed both to free markets and to democracy, as flawed as each may be on occasion. We need to find a way to draw on both sides in formulating environmental policy. 

Farber argues that in order for regulation to be durable, or “socially sustainable”, it must appeal to both sides of the spectrum. Accordingly, he advocates
through eco-pragmatism a decision-making approach that he sees as being sufficiently in the “middle” to garner broad-based and sufficient support, yet reflective of what he views as society’s primary norm. Farber writes that our “key norm” is that humans are entitled to a safe environment as well as to environmental preservation – “tempered by an awareness of competing goals”.

Flournoy describes Farber’s approach as “an ethic of sustainability or an ecological utilitarian ethic”. The latter being an ethic in which maximizing human welfare is central, but certain shortcomings of the “utilitarian ethic” approach (e.g., failure to address ecology, scientific uncertainty and the limitations of market economics) are addressed.

2.2 The Eco-pragmatic Framework

In *Eco-pragmatism*, Farber attempts to address the following questions:

- Which has priority: environmental values or economic needs?
- Rather than looking to which has priority, is a balancing of environmental values and economic needs necessary?
- If we are going to make trade-offs between environmental and economic values, how are these very different values to be assessed and measured?
- If there are significant costs associated with an environmental rule (e.g., lost jobs or a lower standard of living), when is such a rule justified?
- Should we approach environmental decisions with a presumption in favour of protecting the environment? Or should we start from a neutral position, with no preference for or against environmental protection? Who bears the burden of proving whether a rule is justified?
- How do we determine what we should spend (or forgo) today in favour of environmental benefits to be enjoyed by future populations?

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56 “In Search of an Environmental Ethic”, *supra* note 10 at 95.
• How do we decide when to take action to address potential environmental problems? More specifically, when there are uncertainties and unknowns (e.g., scientific uncertainties), how do we know when it is appropriate to delay taking action? How do we determine what types of actions are appropriate in such circumstances?

• Finally, how do we avoid becoming “locked into” outdated environmental policies and regulations?58

Farber argues that there tends to be two basic approaches to answering these types of questions and making environmental policy decisions.59 In simplified terms, the first approach looks to economic efficiency and cost-benefit analysis (the “economic approach”) as a means to address difficult environmental decisions. The other holds as paramount, in all situations, public health and environmental quality (the “political approach”). Farber writes:

Despite their conflicts, advocates of both approaches share a belief that environmental policy can be based on a single over-riding value, whether that value is economic or environmental. Both sides seek rigid methods of making environmental decisions, in which the correct answer is guaranteed if only decision makers follow the right recipe.60

As discussed in the immediately preceding section, Farber is of the view that there is little utility in addressing environmental policy as a choice between these two approaches.61 First, engaging in a debate over which of these “holistic theories” should be relied on does not actually provide answers to environmental problems.62 Second, according to Farber, neither approach is adequate because “in reality, both market and political mechanisms have flaws as expressions of public interest”.63 Farber argues that markets do

58 Eco-pragmatism, supra note 4 at 3 and 5-6.
59 See Ibid. at 6-9.
60 Ibid. at 9.
61 Ibid. at 7-9.
62 Ibid. at 9.
63 Ibid. at 42.
not, for example, adequately deal with “public goods” such as air. Notwithstanding, Farber believes it wrong to ignore private preferences. “Willingness to pay” (i.e., the market) conveys information that “willingness to vote” (i.e., politics) does not. Farber argues that both politics and markets indicate public interest and, therefore, both are relevant and should be reflected in environmental decisions.

Although Farber argues that both economic efficiency and environmental values are relevant, he emphasizes the latter in his eco-pragmatic approach. Farber writes that we have a “key norm” – this being that humans are entitled to a safe environment as well as to the preservation of nature. He sees this norm as well rooted in political culture. According to Farber, our attitudes reflect a firm “belief in personal autonomy and physical integrity, which are threatened by involuntary exposure to pollution”. Although he recognizes that the competition among our values is complex, Farber is of the view that we are pulled more strongly by environmental values than by economic ones.

Farber argues that because we have an overriding commitment to environmental quality, we should develop policy and address issues starting from this position. As will be explained in further detail below, Farber recommends that we also employ feasibility considerations and cost-benefit analysis to avoid unreasonable decisions that do not reflect society’s other values, particularly those that are economic in nature. At some point, explains Farber, the costs of protecting the environment outweigh the benefits – it is where this line should be drawn that is the difficulty. Farber states that although there is no formulaic way to draw the line, our approach to making environmental decisions cannot

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64 Ibid. at 42-43.
65 Ibid. at 54.
66 Ibid. at 64.
67 Ibid. at 42.
68 Ibid. at 199-200.
69 Ibid. at 199. Note that although Farber is writing specifically about the United States, his comments are sufficiently North American to be used for the purposes of this thesis.
70 Ibid. at 200.
71 Ibid. at 201.
72 Ibid. at 94.
73 Ibid. at 4.
be entirely *ad hoc* – there needs to be some coherent policy.\(^74\) The main elements of Farber’s suggested approach are summarized below.

2.2.1 **The Environmental Baseline**

Farber is opposed to implementing a neutral (or cost-benefit based) baseline because it requires a value judgment that there is “symmetry”\(^75\) between those who pollute and those who are impacted.\(^75\) Farber argues that the public does not see such symmetry and public law since the 1970s has rejected the same.\(^76\) Implementing a neutral baseline would result in a presumption in favour of economic efficiency and would shift the burden to those who advocate in favour of non-economic values.\(^77\) Moreover, cost-benefit analysis is not truly neutral because it requires (as will be discussed below) decisions to be made during the calculations that involve value judgments.\(^78\) For these reasons, Farber argues for a baseline with a presumption in favour of environmental values. He states that the goal of his baseline is to provide a satisfactory way of arriving at decisions that is in line with our key (environmental) norm.\(^79\) Farber is of the view that when the baseline proves to be decisive, it should be decisive in favour of this overarching norm, rather than subordinate norms relating to economic values.

Farber qualifies his presumption in favour of the environment by making it rebuttable. As mentioned previously, Farber acknowledges that at some point the costs of protecting the environment outweigh the benefits. To determine when the presumption in favour of the environment should be rebutted, he proposes applying a hybrid of feasibility and cost-benefit analysis. Simply put, cost-benefit analysis looks not only for the least costly regulatory option, but the option that is the most economically efficient – *i.e.*, provides the economically optimum level of environmental quality.\(^80\) Feasibility-based regulation

\(^74\) Ibid. at 10.
\(^75\) Ibid. at 113.
\(^76\) Ibid.
\(^77\) Ibid. at 97.
\(^78\) Ibid. at 7-9.
\(^79\) Ibid. at 113.
\(^80\) See Ibid. at 7.
promotes instead the maximum feasible level of environmental quality. In other words, if there is a threat or risk to the environment, it is to be eliminated to the extent “feasible”, for example through the use of the “best available technology”. Farber employs a combination of both methods because each, in his view, is inadequate when applied alone. Farber does however give feasibility analysis priority. In justifying the use of feasibility analysis over cost-benefit analysis for the purposes of his baseline, Farber identifies some of informational limitations associated with the latter:

Cost-benefit analysis, because it is more quantitative and formalized, puts higher information demands on the analyst. We have to know not only that the risks are significant, but also just how high they are; not only that the costs are feasible, but also just what they will run; not just that a number of deaths over a given period of time is too high, but also what their monetary value is and how to discount it to present value. And we need to know all these things accurately enough to compare the magnitudes of the relevant figures. It will sometimes be clear that cost-benefit analysis comes out one way or the other, but more often, we will simply be left unsure at the end of the day. Someday, with a better information base, we may obtain more precision in cost-benefit analysis. But we are a long way from reaching that point today. [Emphasis in the original.]

Farber suggests that cost-benefit analysis can be best used as a “backstop” to avoid incurring disproportionate costs after considering feasibility. Farber reasons that we cannot fail to consider the costs of regulation, especially when the environmental risks are unclear – as the money spent could be better allocated elsewhere.

In short, Farber articulates a baseline that is in favour of the environment (thus reflecting our primary norm), but that is qualified by a combination of feasibility and cost-benefit analysis. He is proposing that significant risks to the environment be eliminated to the extent feasible, except when the costs of addressing such risks exceed the potential benefits. Farber describes his “environmental baseline” as a hybrid of feasibility and cost-benefit analysis, “designed to take advantage of the environmentalist tilt of the former and the ‘reality check’ of the latter”.

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81 Ibid. at 70.
82 Ibid. at 168-69.
83 Ibid. at 71.
84 Ibid. at 114.
2.2.2 Factoring in Lengthy Time Horizons

Farber recognizes that when addressing environmental problems, society and, in particular, regulators must deal with significant periods of time.\(^{85}\) He accepts, as a given, that “we should give serious attention” to our own future needs and the needs of future generations.\(^{86}\) Farber states that although we cannot solve environmental problems for future populations, “[w]e will do well enough if we leave them a livable world and well-designed institutions with which to make their own choices”.\(^{87}\) He recognizes that our society does value security, at least for our children and grandchildren,\(^{88}\) but acknowledges:

> Whatever may be true in the abstract about our duties to future generations, we know that people are willing to make some sacrifices for their descendants, but only within limits. Any practical scheme of environmental protection must function within those limits.\(^{89}\)

Accordingly, Farber recommends the use of different methods for addressing various lengths of time in order to maintain support for – and foster social sustainability of – environmental regulation. If the methods of addressing time horizons are not reasonable, argues Farber, they will not be accepted. There is a need to ensure that public support for the approach chosen is maintained, otherwise the goal of providing a “decent” environmental minimum to future populations will not be realized.\(^{90}\) Farber argues that because people are willing to make only limited sacrifices for their immediate descendents, our focus is best placed on the next generation or so, using a discount rate of approximately 1 or 2 per cent.\(^{91}\) With respect to populations in the far distant future, he suggests employing the concept of “environmental stewardship”, arguing that discounting is not useful in these circumstances.\(^{92}\) The more distant into the future these types of calculations are projected, the more unreliable

\(^{85}\) Ibid. at 133.
\(^{86}\) Ibid. at 161.
\(^{87}\) Ibid.
\(^{88}\) Ibid.
\(^{89}\) Ibid. at 153.
\(^{90}\) See Ibid. at 203.
\(^{91}\) Ibid. at 153 and 155-56.
\(^{92}\) Ibid. at 155.
they become. According to Farber, what is reasonable when dealing with very significant periods of time is merely to try to “avoid substantial risks of future disaster to remote descendents”.

2.2.3 Dealing with Uncertainty

Farber recognizes that environmental policy must be able to address uncertainties regarding the existence and level of environmental risk. He is attempting through his eco-pragmatic approach to formulate a framework to deal with uncertainty in environmental regulation that can accommodate changes in scientific and other information, avoid the making of irreversible (environmentally harmful) decisions, and also avoid “draconian” regulation of risk.

By way of illustration, Farber explores the difficulty associated with calculating the risk that a particular endangered species will become extinct. We may not, for instance, have sufficient information on the population of the species or on its reproductive success rate. As a result, modeling the extinction process for that species may prove rudimentary. Moreover, it is often very difficult to estimate with any accuracy the costs to an industry or to society of a particular regulatory approach implemented to protect an endangered species. Accordingly, reasons Farber, we cannot with any certainty perform a cost-benefit analysis of a regulatory option to assess whether it is cost-justified. Farber writes however:

Although the uncertainty surrounding environmental policies is humbling, we are not completely in the dark. We do know that the likely level of risk is considerably larger in some situations than in others. We have at least crude information about compliance costs and rough notions about what kinds of financial sacrifices people are willing to make ... We need to find ways to use what information we have to

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93 Ibid.
94 Ibid.
95 Ibid. at 163-64.
96 See Ibid. at 166-67.
97 See Ibid. at 167.
98 Ibid.
make sensible decisions, without forgetting the uncertainty surrounding those decisions.\textsuperscript{99}

Farber suggests that regulatory agencies should bear the burden of establishing that the environmental risks they are regulating in respect of are significant and that their regulations and remedies are feasible.\textsuperscript{100} However, the burden of proof should be shifted to the polluter when the regulator has evaluated all available information and cannot with any certainty estimate the risks and the feasibility of potential remedies.\textsuperscript{101} In other words, Farber supports applying the “precautionary principle” in a way to shift the burden of proof to the polluter, thus requiring the polluter to show that its activities are harmless when uncertainty exists.\textsuperscript{102} Farber is of the view that burden shifting is useful in that it can function as a kind of “tiebreaker”.\textsuperscript{103} Farber writes that the regulator’s “hands should not be tied when it has evaluated all of the available evidence, but cannot make a confident risk estimate … it should be free, in its best judgment, to implement reasonable regulations as a precaution against environmental hazards.”\textsuperscript{104}

2.2.4 Dynamic Environmental Regulation

In order for environmental policy and regulation to be effective over time, Farber argues that it must be “dynamic”. He suggests that our regulatory approach should be altered to be better able to take advantage of the continual improvements in scientific knowledge.\textsuperscript{105} An environmental regulatory regime should be able to “learn” (e.g., through experimentation and evaluation) and be ready and able to adapt.\textsuperscript{106} Farber suggests that discretion on the part of regulators can be a useful tool for promoting this type of flexibility. He cautions however that too much discretion may result in regulatory actions that are not in keeping with our “primary norm”.

\textsuperscript{99} Ibid. at 168.
\textsuperscript{100} Ibid. at 173.
\textsuperscript{101} Ibid.
\textsuperscript{102} Ibid. at 171.
\textsuperscript{103} Ibid. at 173.
\textsuperscript{104} Ibid.
\textsuperscript{105} Ibid. at 164.
\textsuperscript{106} Ibid. at 179 and 184.
Although he does not advocate deregulation, Farber suggests that decision-making might be better if it were "decentralized", either to the private sector or lower levels of government, and made less cumbersome.\footnote{Ibid, at 179-80.} Decentralization would, in Farber's view, allow regulators to be more responsive to changing circumstances.\footnote{Ibid, at 180.} In addition to his arguments for more "nimble"\footnote{Ibid, at 193.} and simplified environmental law and policy, Farber advocates focusing on initial data collection (to determine the current level of environmental quality)\footnote{Ibid, at 184.} and on monitoring and follow-up measures over time, which allow corrective actions to be taken.\footnote{Ibid, at 180.}

Farber also supports delaying regulatory actions until sufficient information is available or taking only intermediate and limited actions until adequate information can be gathered.\footnote{Ibid, at 186-88.} Although, he is in favour of erring on the side of caution when dealing with environmental policy, he is aware of the possibility that regulation can be too burdensome without real benefit and that this can erode public support for the regulation. Accordingly, Farber emphasizes the need to correct over-regulation to maintain commitment and prevent "political backlash".\footnote{Ibid, at 202.} Regulatory systems, Farber argues, need a built-in ability to address shortcomings -- i.e., they require internal "corrective mechanisms".\footnote{Ibid.}

### 2.2.5 Case Study: Reserve Mining

Farber chooses Reserve Mining Company v. United States\footnote{514 F.2d 492 (8th Cir. 1975) (en banc).} ("Reserve Mining") as his case study for the purposes of developing and applying eco-pragmatism. The author explains that he has selected this decision because it,
... was the first major judicial confrontation with environmental risk. It raised troubling issues regarding scientific uncertainty, the difficulty of balancing cost against public health, and the long-term nature of environmental harms.\textsuperscript{116}

Farber goes on to argue,

\textit{Reserve Mining} remains a leading case on the subject of risk regulation even today. Its dramatic facts make it an ideal vehicle for thinking about environmental risks and how they should be controlled. The court was confronted with a massive discharge of asbestos, a known carcinogen, into Lake Superior. But almost all the medical evidence related to the danger of airborne asbestos. Whether there was any health risk from asbestos in drinking water was unclear. Thus, the court was faced with a massive gamble at unknown odds. At stake were hundreds of millions of dollars versus the safety of the people of Duluth, Minnesota. We could hardly invent a more arresting example of the quandary posed by environmental risks.\textsuperscript{117}

The facts of the case can be briefly summarized as follows.\textsuperscript{118} The Reserve Mining Company ("Reserve") operated on the north shore of Lake Superior. The company had been issued a permit to mine taconite (a low-grade iron ore) in 1947 and had begun producing and distributing ore in 1956. The local communities had a positive relationship with Reserve. The enterprise proved highly profitable and was viewed as "an economic savior for the region".\textsuperscript{119} An aspect of the company's operations included disposing of the mine's tailings (\textit{i.e.}, waste by-products) in Lake Superior. Although there was little direct evidence of harm to aquatic life, studies of the lake revealed that state water-quality limits for iron, lead and copper were being exceeded, as were the recommended limits for zinc and cadmium. Given the size of the lake and its varied uses, it was difficult to establish which industries were at fault. Reserve was generally uncooperative with regulators and maintained that it was not causing harm to the lake. A suit was eventually filed by the Environmental Protection Agency against the company. The suit initially focused on ecological damage to Lake Superior. It evolved, however, into a case concerning the public health risks associated with asbestos in the lake - Duluth's source of drinking water.

\textsuperscript{116} \textit{Eco-pragmatism, supra} note 4 at 16.
\textsuperscript{117} \textit{Ibid.}
\textsuperscript{118} This summary is based primarily on Farber's discussion of \textit{Reserve Mining}, see \textit{Ibid.} at 16 to 34.
\textsuperscript{119} \textit{Ibid.} at 17.
Given the science at the time (the case was heard in the mid-1970s) it was difficult to determine the asbestos level in Lake Superior. Moreover, it was not known whether the consumption of asbestos was in fact harmful. The trial judge placed the burden of proof on Reserve, requiring the company to establish that the level of asbestos present in the drinking water was safe. Given the uncertainties, Reserve was unable to meet its burden and the trial judge issued a shut-down order. The extreme nature of the court's remedy was (it would seem) based in part on Reserve's conduct. The company had apparently given misleading and inaccurate responses when questioned about the possibility and cost of disposing of its tailings on land, rather than in the lake.

The decision of the trial judge was appealed. The Eighth Circuit stayed the shut-down order and went on to consider the evidence, concluding that it could not be sure that asbestos in drinking water would cause an increase in cancer rates. The court also found however that there was reasonable concern among medical professionals regarding the possible public health effects of asbestos ingestion, and this concern was sufficient to justify abatement of the hazard on reasonable terms. The court, recognizing that a shut-down of Reserve's operations would harm the company as well as the community, chose to allow the company to continue operating – provided Reserve shifted to land-based waste disposal.

Farber observes that the courts in Reserve Mining,

... were faced with a difficult task in weighing an uncertain risk to public health against an approximately $200 million expenditure [on the part of Reserve to alter its disposal practices]. The question posed by the case is how to go about making such trade-offs between safety and cost. Reserve Mining provides an excellent context in which to discuss why these choices are so hard, and what methods have been proposed for making them, and how we might go about solving these cases in a sensible way.\textsuperscript{120}

Farber adds that the case is,

... a difficult case for several reasons, even apart from the scientific uncertainty about the extent of the risk. The first is the difficulty of somehow assessing the weight to give economic costs versus a possible public health risk. The values at stake are so different that we aren't sure how to compare them ... The analytic difficulties are

\textsuperscript{120} Ibid. at 33.
compounded by the temporal dimension of environmental problems. The risks facing the appeals court were very long-term, and it is hard to weigh risks that may not materialize for decades against money and jobs that will be lost today. Also, during the dispute, there were rapid changes in scientific knowledge – the asbestos threat to drinking water wasn’t even known when the case began. We can expect future scientific knowledge to continue to change in dramatic and unexpected ways.\textsuperscript{121}

After using \textit{Reserve Mining} to inform his development of eco-pragmatism, Farber applies his baseline to facts of the case and arrives at the following conclusion:

Under this hybrid approach, the proper decision in \textit{Reserve Mining} seems clear. There was by all accounts a potentially serious threat to health; it was technologically and economically possible to eliminate the risk; and the costs-benefit analysis was at least a close call, so that the company could not claim that the costs were patently disproportionate to the benefits. In short, the Eight Circuit had it right, given the information it had to work with.\textsuperscript{122}

\begin{footnotesize}
\begin{enumerate}
\item[Ibid.] at 33-34.
\item[Ibid.] at 116.
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\end{footnotesize}
3. CANADIAN ENVIRONMENTAL ASSESSMENT ACT

3.1 Statutory Goals and Objectives

CEAA has a number of stated goals and objectives. The primary or overarching goal is to foster sustainable development. This concept is defined in the Act as “development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.” The purposes of CEAA specifically include encouraging authorities to take actions to “promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy.” EIA is considered by the federal government to be a key element in the implementation of sustainable development because it provides a means of integrating environmental factors into planning and decision-making processes.

Sustainable development is to be achieved in part by preventing those projects and activities to which the Act applies from causing “significant adverse environmental effects”. CEAA requires that harmful environmental impacts be avoided or minimized. The Act provides that government is committed to “anticipating and preventing the degradation of environmental quality” and that CEAA is intended to ensure “projects are considered in a careful and precautionary manner” before they are approved.

CEAA also has as an objective the enhancement of public participation in the EIA process. The Act provides that government is committed to facilitating public participation in the assessments conducted under CEAA and providing the public with access to the information upon which CEAA assessments are based. The Act’s purposes

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123 CEAA, supra note 1, s. 2(1).
124 Ibid., s. 4(1)(b).
126 See CEAA, ibid., preamble and s. 4(1)(a).
127 Ibid., preamble.
128 Ibid., s. 4(1)(a).
129 Ibid., preamble.
specifically include ensuring “opportunities for timely and meaningful public participation throughout the environmental assessment process”.

3.2 Application

CEAA applies, or is “triggered”, in circumstances where a federal authority: (a) is itself a project proponent; (b) provides financial assistance to a project proponent; (c) disposes of an interest in land for the purposes of a project; or (d) exercises certain regulatory duties, such as issuing particular permits or licences required for a project to proceed. The federal authorities exercising these duties or functions become “responsible authorities” for the purposes of the Act and are required to ensure that an EIA is undertaken before a project caught by the Act proceeds. A “project” is defined for the purposes of CEAA as any “proposed construction, operation, modification, decommissioning, abandonment or other undertaking” in relation to a physical work. The definition also includes those activities that are unrelated to physical works that are listed in the Inclusion List Regulations promulgated under the Act. Another set of regulations, the Exclusion List Regulations, carves out exceptions to the requirement for an EIA for certain types of projects that are understood not to have significant environmental effects.

130 Ibid., s. 4(l)(d). This reference to “timely and meaningful” participation was added to CEAA in 2003, see S.C. 2003, c. 9, s.2. The amendment was (according to the Agency) made in a response to the results of the “Five Year Review” of the Act, which highlighted the value of public participation: Canadian Environmental Assessment Act – Explanation of Amendments to the Act: October 2003, online: Canadian Environmental Assessment Agency <http://www.c«ae-acee.gc.ca/012/003/act-amendments_e.pdf> (date accessed: 18 April 2005) at 34 [hereinafter “Explanation of CEAA Amendments”]. Section 72 of CEAA specifically required that a comprehensive review of the legislation be undertaken five years after the Act was proclaimed in force (i.e., in January 2000).

131 A “federal authority” includes federal government ministers, departments and agencies, and certain Crown corporations, see CEAA, ibid., s. 2(1) for further detail.

132 See the Law List Regulations, SOR/94-636.

133 CEAA, supra note 1, s. 5(1).

134 Ibid., ss. 2(1) and 11(1).

135 Ibid., s. 2(1).

136 SOR/94-637. For example, s. 25 of this regulation provides that the testing of military weapons outside of certain areas requires an EIA.

137 SOR/94-639. For example, s. 19 exempts the proposed construction of a farm water supply well or dugout that is not within 30m of a water body and would not involve the likely release of a polluting substance into a water body.
It is important to emphasize that CEAA does not apply to all areas of federal jurisdiction, only to certain specifically identified areas of federal decision-making. Further, the Act applies only to proposed (rather than existing) physical works and activities and does not apply to federal policies, plans and programs. Application of EIA to proposed governmental policies, plans and programs is referred to as “strategic environmental assessment” (“SEA”). It is generally agreed that an effective EIA system includes this type of assessment. SEA is currently the subject of a non-binding Cabinet directive. The federal government has been severely criticized for failing to include strategic assessment in CEAA. Moreover, according to Gibson, SEA in Canada “lacks transparency and has been widely ignored”. Since Gibson made these observations in 2001, there have been some improvements. The Cabinet directive was revised in 2004 in an effort to improve transparency. Public statements must now be prepared when a SEA has been carried out. In addition, the Canadian Environmental Assessment Agency (or the “Agency”) has stated in its Sustainable Development Strategy 2007-2009 that one of its key activities during

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138 See P.S. Elder, “Environmental and Sustainability Assessment” (1992) 2 J.E.L.P. 125 at 130 wherein the author argues that restricting the application of CEAA to proposed activities and works is a flaw in the Act.


144 Ibid.
this period will be to promote SEA at the federal level.\textsuperscript{145} The Agency is responsible for administering CEAA, carrying out general EIA research and development, and providing advisory and administrative support to responsible authorities undertaking an EIA of a proposed project.\textsuperscript{146}

### 3.3 Assessment Types

CEAA provides for four levels or types of assessment: screening, comprehensive study, mediation and panel review. The objective of each type of assessment is to determine whether the project under review will be likely to result in significant adverse environmental effects. As will be considered in more detail below, the determination of the "significance" of any anticipated environmental effects is arrived at taking into consideration those mitigation measures (if any) the responsible authority considers appropriate in the circumstances.\textsuperscript{147} "Mitigation" is defined in the Act to mean "the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means".\textsuperscript{148} Before discussing in detail the application of CEAA, each type of assessment will be introduced and briefly outlined.

A screening level assessment is the most common of the four types of EIA conducted under CEAA.\textsuperscript{149} If adequate information is not already available to screen a project, additional studies will be undertaken and information collected.\textsuperscript{150} The responsible authority may allow the public to participate at any time during a screening.\textsuperscript{151} After screening has been completed and a screening report prepared, the responsible authority must


\textsuperscript{146} For details on the role and responsibilities of the Agency, see CEAA, \textit{supra} note 1, ss. 61 to 70.

\textsuperscript{147} \textit{Ibid.}, s. 20(1)(a). This includes mitigation measures that would be implemented by another jurisdiction (e.g., a provincial, municipal or aboriginal government): \textit{ibid.}, s. 20(1.1).

\textsuperscript{148} \textit{Ibid.}, s. 2(1).

\textsuperscript{149} Approximately 6,000 screenings are undertaken each year, see "Real Reform Deferred", \textit{supra} note 141 at 212.

\textsuperscript{150} CEAA \textit{supra} note 1, s. 18(2).

\textsuperscript{151} \textit{Ibid.}, s. 18(3).
take one of three actions. Where the project is not likely to result in any significant adverse environmental effects, the responsible authority may allow the project to proceed (i.e., exercise its duties or functions that resulted in CEAA being triggered). The responsible authority must decline to exercise its authority to allow the project to proceed where the project is likely to result in significant adverse environmental effects that are not justified in the circumstances. The third option is referral of the project to a mediation or review panel. The responsible authority must refer the project under review in a number of situations. A referral must be made where there is uncertainty regarding the likelihood of significant adverse environmental effects. A referral must also be made where the project is likely to result in significant adverse environmental effects and these effects can be justified. Finally, the responsible authority must refer the project to a mediation or panel review where public concern warrants the referral. It is worth noting it has been reported that between January 1995 and March 2001 only two projects undergoing screening were referred (in both these cases the reference was to a review panel). It is also worth noting that although the least rigorous form of environmental assessment is screening, significant projects can be reviewed in this way. For example, the EIA of the fixed link bridge between New Brunswick and Prince Edward Island was undertaken by way of screening.

A comprehensive study involves a more complex assessment process. Projects that are subject to this type of assessment are listed in the Comprehensive Study List Regulations. These projects are presumed to have the potential for significant adverse environmental effects. If a project is listed in the regulations, the responsible authority must consult with the public in order to determine the scope of the project, the factors to be

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152 Ibid., 20(1)(a).
153 Ibid., 20(1)(b).
154 Ibid., s. 20(1)(c)(i).
155 Ibid., s. 20(1)(c)(ii).
156 Ibid., s. 20(1)(c)(iii).
157 "Real Reform Deferred", supra note 141 at 208.
159 SOR/94-638. For example, pursuant to these regulations CEAA applies to projects such as fossil fuel-fired electrical generating stations and to activities such as military exercises involving the low-level flying of fixed-wing jet aircraft: ss. 4(a) and 27.
considered during the assessment and whether the project should be instead reviewed by way of mediation or panel review. Following consultation, the responsible authority reports to the federal Minister of Environment (the “Minister”) and provides its recommendations on whether the project should proceed as a comprehensive study. The Minister will determine whether the project will be returned to the responsible authority and the comprehensive study continued, or will be referred to a mediator or review panel.

If the EIA continues as a comprehensive study, a comprehensive study report will be prepared and submitted to the Minister. The Minister will consider the report and issue a decision statement communicating his or her opinion on whether the project will be likely to cause significant adverse environmental effects. The decision statement will also describe the mitigation measures and any follow-up programs the Minister considers necessary. The Minister will then refer the project back to the responsible authority for a project decision under section 37 of CEAA. Section 37, which also applies in respect of mediations and panel reviews, is discussed below.

If it is decided that an assessment will be carried out through mediation, the Minister will appoint an independent and impartial person with the requisite experience to act as the mediator. Only “interested parties” will be entitled to participate in the process. In other words, only those persons and entities that have an interest in the outcome of the assessment that is “neither frivolous nor vexatious” will be included in the negotiations. Mediation will only be carried out if all interested parties agree to participate in the

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160 CEAA, supra note 1, s. 21(1). Note that other opportunities for public participation are also provided for during a comprehensive study, see ibid., s. 21.2.

161 Ibid., s. 21(2).

162 Ibid., s. 21.1(1). In 2003 the Act was amended and it is no longer possible to refer a project undergoing a comprehensive study to a review panel at any time during the assessment, see S.C. 2003, c. 9, 12. After the Minister takes the decision to have the project assessed as a comprehensive study, it must be assessed in this manner. According to government, the change was made to “provide greater certainty and predictability to the comprehensive study process by eliminating the possibility of a second environmental assessment, by a review panel or a mediator, following completion of a comprehensive study”: “Explanation of CEAA Amendments”, supra note 130 at 89.

163 CEAA, ibid., s. 23(1).

164 Ibid.

165 Ibid., s. 30(1).

166 Ibid., s. 2(1).
process.\textsuperscript{167} Once the mediation has been completed, the mediator will prepare a report and submit a copy to the Minister and to the responsible authority.\textsuperscript{168} The report must be taken into account by the responsible authority in making a decision under section 37 of the Act. To date, there have been no mediations under CEAA, and only one\textsuperscript{169} under its predecessor process.\textsuperscript{170}

Where a project is referred to a review panel,\textsuperscript{171} the Minister will appoint the panel members.\textsuperscript{172} Members must be unbiased, free from any conflict of interest and have knowledge or experience that is relevant to the project under review.\textsuperscript{173} Section 34 of CEAA sets out how an assessment is to be conducted by a review panel. The panel must first obtain all the information necessary for the review and make this information available to the public. The panel must then hold hearings and prepare a report setting out its rationale, conclusions and recommendations in respect of the project, including any mitigation measures and follow-up programs deemed necessary. Review panels generally have the powers afforded a court and may, for example, summon witnesses and order documents to be produced.\textsuperscript{174} The panel prepares a final report, which is then submitted to the responsible authority for a decision under section 37 of CEAA. Although the report is not binding,

\textsuperscript{167} Ibid., s. 29(2).
\textsuperscript{168} Ibid., s. 32(1).
\textsuperscript{170} CEAA was preceded by the “Environmental Assessment and Review Process” (“EARP”). It was through EARP that the federal government first implemented EIA in Canada. EARP was comprised of a number of Cabinet directives. The original directives were dated June 3, 1972 and December 20, 1973; a further directive was issued in 1977, see M.I. Jeffery, “The New Canadian Environmental Assessment Act – Bill C-78: A Disappointing Response to Promised Reform” (1991) 36 McGill L. J. 1070 at 1070. EARP was consolidated in 1984 as the Guidelines Respecting the Implementation of the Federal Policy on Environmental Assessment and Review, SOR/84-467 (June 22, 1984). These guidelines, commonly referred to as “EARPGO”, were repealed when CEAA came into effect on January 19, 1995.
\textsuperscript{171} Assessment by review panel is rare. According to Benevides between 1995 and 2001 only 11 panels were struck: “Real Reform Deferred”, supra note 141 at 212.
\textsuperscript{172} CEAA, supra note 1, s. 33.
\textsuperscript{173} Ibid., s. 33(1)(a)(i).
\textsuperscript{174} Ibid., ss. 35(1) and (2).
government appears reluctant to disregard a panel’s recommendations given the potential for the public to react negatively.\textsuperscript{175}

In order to avoid regulatory duplication where an EIA is required under both federal and provincial legislation, a “joint” panel review may be implemented.\textsuperscript{176} Joint panel reviews can also be undertaken where more than one federal body or agency has the jurisdiction to assess the environmental impacts of a proposed project.\textsuperscript{177} This type of joint review is also possible where a project is subject (in whole or in part) to an EIA in both Canada and a foreign jurisdiction.\textsuperscript{178}

In accordance with section 37 of CEAA, the responsible authority will decide to either allow a project under review to be carried out or refuse to exercise its duties or functions that would permit the project to proceed. A project that is likely to result in significant environmental effects will only be approved if those effects are “justified” in the circumstances. If the EIA has been carried out as a mediation or panel review, or has been carried out as comprehensive study and the Minister has issued a decision statement indicating that there are likely to be significant adverse environmental effects, the responsible authority will need to obtain the approval of Cabinet with respect to its decision.\textsuperscript{179} In the case of a mediation or panel review, the responsible authority is required to prepare a response to the report of the mediator or panel and submit this response to Cabinet.\textsuperscript{180} Once Cabinet has approved the responsible authority’s response to the mediation or panel report, the authority may allow the project to be carried out where it is not likely to cause significant adverse environmental effects or, if the project is likely to cause such effects, the effects are justified in the circumstances.\textsuperscript{181} As will be discussed in further detail below, the Act does not define “significant” or “adverse”, nor does it address in what circumstances significant adverse environmental effects would be “justified” and a project permitted to proceed. It is

\textsuperscript{175} See Jeffrey, supra note 170 at 1087.
\textsuperscript{176} See CEAA, supra note 1, s. 40(2).
\textsuperscript{177} See ibid.
\textsuperscript{178} See ibid., s. 40(3).
\textsuperscript{179} CEAA, supra note 1, ss. 37(1.1) and (1.3).
\textsuperscript{180} Ibid., s. 37(1.1).
\textsuperscript{181} Ibid., s. 37(1)(a).
should be emphasizing that Cabinet is ultimately responsible for deciding whether to allow projects to proceed that are likely to result in significant adverse environmental effects. In other words, it is the final arbiter of whether environmentally harmful projects are justified.

It has been reported that between 1995 and 2000, 99.9 per cent of the 25,000 EIAs conducted by the federal government were carried out as screenings, 46 projects were subjected to a comprehensive study, 10 projects were reviewed by a panel, and no mediations were carried out.\(^{182}\) During this period, it would appear that over 99.9 per cent of the projects undergoing assessment were approved.\(^{183}\) Although this statistic may be accurate, it should be recognized that the extremely high approval rate may be (at least in part) a function of how the CEAA process seems to encourage proponents to remove projects from the assessment process early when those projects cannot be feasibly modified or their impacts sufficiently mitigated in order to obtain approval.\(^{184}\)

### 3.4 Defining the Scope of the Project and the Assessment

Prior to conducting an EIA under CEAA, the responsible authority or Minister must “scope” the project and the assessment. In other words, the decision-maker must define precisely what the “project” is and which factors will be considered relevant for the purposes of carrying out the assessment.

#### 3.4.1 Scope of the Project

CEAA requires the responsible authority (or the Minister in circumstances of a review panel or mediation) to determine the “scope of the project” to be assessed.\(^{185}\) If the

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\(^{182}\) Boyd, supra note 139 at 152. See also “Explanation of CEAA Amendments”, supra note 130 at 95.

\(^{183}\) Boyd, ibid. at 151.

\(^{184}\) Although there is data available on the number of assessments “terminated” in various years, it is unclear to what extent this category reflects situations where proponents have abandoned their projects because it appears unlikely these projects will be approved. For example see the statistical summary provided by the Agency on its Internet site for the fiscal year 2005-2006. During this period, the Department of Fisheries and Oceans (or DFO) was the responsible authority for 630 ongoing screening assessments, 727 screening assessments were initiated, 595 screening assessments were completed and 66 screening assessments were terminated: *Statistical Summary — 2005-2006*, online: Canadian Environmental Assessment Agency <http://www.ceaa-acee.gc.ca/010/stats0506_e.htm> (date accessed: 28 January 2007).

\(^{185}\) CEAA, supra note 1, s. 15(1).
project is a physical work, the responsible authority or Minister also determines which
related operations or undertakings are to be considered relevant for the purposes of the
assessment.\textsuperscript{186} Hobby has observed:

The challenge in determining the scope of a project is to find the balance
between artificially separating related undertakings or activities for the purposes of
an environmental assessment (which has been described as “project splitting”) and
casting the net too widely to include undertakings or activities that are remotely
related to the triggered project and that are typically matters within the jurisdiction of
the province where the project is located.\textsuperscript{187}

The Canadian courts have found that the responsible authority or Minister enjoys a great deal
of discretion in defining project limits and identifying which activities are related. For
example in \textit{Friends of the West Country Assn. v. Canada (Minister of Fisheries and
Oceans)}\textsuperscript{188} the proponent sought approval to build two bridges along a road recently
constructed to transport logs to its mill from its forestry operations. Although the bridges,
road, mill and forestry operations were interdependent, the Federal Court of Appeal
ultimately held that the responsible authority was entitled to identify each bridge as a
separate project and exclude from consideration the associated road, mill and forestry
operations. This example illustrates that the nature and extent of the potential environmental
impacts considered in an EIA will vary greatly depending upon how narrowly the project is
defined by the responsible authority or Minister and what related operations or undertakings
the decision-maker considers relevant.

Although CEAA itself does not provide any guidance, the (non-binding)
\textit{Responsible Authority’s Guide} provides a test intended to assist responsible authorities and
the Minister in determining the scope of a project.\textsuperscript{189} The guide states that in order to ensure
some consistency in the scoping of projects, decision-makers should consider applying the

\textsuperscript{186} \textit{Ibid.}, s. 15(3).
\textsuperscript{187} B. Hobby \textit{et al.}, \textit{Canadian Environmental Assessment Act: An Annotated Guide}, looseleaf (Aurora: Canada
\textsuperscript{189} \textit{Canadian Environmental Assessment Agency, The Canadian Environmental Assessment Act: Responsible
Authority’s Guide} (Ottawa: Minister of Supply and Services Canada, 1994) [hereinafter Responsible
Authority’s Guide]. A copy of the guide can be found online: \textit{Canadian Environmental Assessment Agency
“principal project/accessory” test. First, consideration should be given to what the principal project is. According to the guide, the principal project must always be included within the scope of the project and it will be either the undertaking in relation to a physical work or the physical activity that triggered CEAA. Second, the responsible authority or Minister should include within the project’s scope any other works or activities that are accessory to the principal project. The following criteria are intended to assist in making this determination:

**interdependence:** If the principal project could not proceed without the undertaking of another physical work or activity, then that other physical work or activity may be considered as a component of the scoped project.

**linkage:** If the decision to undertake the principal project makes the decision to undertake another physical work or activity inevitable, then that other physical work or activity may be considered as a component of the scoped project.

The Agency’s Operational Policy Statement OPS-EPO/1-1998 also gives some direction on project scoping by setting out a number of issues or factors that may be of assistance when determining the scope of a project. For example, the responsible authority or Minister may want to take into consideration the description of the project provided by the proponent. It is also recommended that the responsible authority or Minister consider whether additional assessments under provincial EIA legislation will be carried out in respect of some aspects of the overall undertaking. This may assist in establishing the boundaries for the federal assessment and prevent regulatory duplication.

Canadian courts – by finding that a responsible authority has nearly unlimited discretion to define a proposed project and identify related undertakings – have declined to provide any guidance with respect to project scoping. Interestingly, American courts have apparently taken a more supervisory and activist role with respect to the implementation of

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190 Ibid. at 18.
191 Ibid.
192 Ibid.
193 Ibid.
EIAs under CEAA's U.S. equivalent, the *National Environmental Policy Act*. Jeffery argues that Canadians would perceive similar intervention as an “unwarranted intrusion into the administrative and regulatory realm of government”. Whether this is an accurate statement is certainly debatable. It can however be said that CEAA has been drafted in such a way so as to avoid administrative review.

3.4.2 Scope of the Assessment

Section 16(1) of CEAA sets out the following list of factors that must be considered during each EIA: (a) the environmental, including cumulative, effects of the project; (b) the significance of the environmental effects; (c) public comments that are received in accordance with the Act; (d) measures that are technically and economically feasible that would mitigate any significant adverse environmental effects; and (e) any other matters considered to be relevant to the assessment. This list comprises the basic minimum for an assessment under the Act. As Hobby has observed, the responsible authority or Minister has “considerable latitude” in defining the scope of an assessment.

Section 16(2) requires that the following additional factors be considered when an assessment is carried out by way of comprehensive study, panel review or mediation: (a) the purpose of the project; (b) alternative means of carrying out the project that are technically and economically feasible – and the environmental effects of any such alternatives; (c) the need for, and the requirements of, any follow-up program in respect of the project; and (d) the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of present and future populations. Hobby correctly comments that these added mandatory factors are required in the context of comprehensive study, panel review or mediation.

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195 Jeffery, *supra* note 170 at 1071-72. The U.S. legislation is cited at *supra* note 139.
197 To successfully challenge a CEAA decision it is necessary to establish that the decision was “patently unreasonable”, see for example: *Union of Nova Scotia Indians v. Canada (Attorney General)* (1996), 22 C.E.L.R. (N.S.) 293 at 320 (Fed. T.D.).
198 Hobby, *supra* note 187 at II-76. For example, in *The Friends of West Country Trilogy* the Federal Court of Appeal made it clear that the responsible authority is not restricted to considering only those environmental effects that emanate from sources within federal jurisdiction, *supra* note 188. See in particular, (1999), 248 N.R. 25 (F.C.C.A) at para. 34.
studies, mediations and panel reviews because of the potential for projects undergoing these types of assessments to result in greater harm to the environment than screened projects.\textsuperscript{199}

### 3.4.3 Scope of Environmental and Cumulative Effects

According to the federal government, the assessment process in Canada “has advanced beyond consideration of impacts on individual species and environmental issues to examination of the cumulative effects of human activities on ecosystems” and “[t]his includes assessing and reviewing projects to ensure that long-term land use objectives are met on a larger regional planning basis.”\textsuperscript{200} As indicated in the preceding subsection, each EIA must include a consideration of the environmental effects of the project under review and “any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out”.\textsuperscript{201} The responsible authority, or the Minister in the circumstances of a review panel or mediation, determines the scope of these factors.\textsuperscript{202} Although CEAA includes a definition of “environmental effect”, it does not provide a definition of “cumulative environmental effects”. Each type of effect will be discussed in turn.

#### 3.4.3.1 Environmental Effects

“Environmental effect” is defined in CEAA to mean any change that the project may cause in the natural environment and the effect of any such change on other

\textsuperscript{199} Hobby, \textit{ibid.} at II-85.


\textsuperscript{201} CEAA, \textit{supra} note 1, s. 16(1)(a).

\textsuperscript{202} \textit{Ibid.}, s. 16(3).
factors such as health and socioeconomic conditions. Penney argues that by "precluding consideration of direct socioeconomic effects, this ... [definition] prevents the kind of integrated, comprehensive impact assessment which is often most relevant to affected communities". In addition to direct socioeconomic effects, others have argued that the definition of environmental effect should be expanded to include cultural considerations. Although not specifically provided for, direct social (including cultural) and economic effects could (at least arguably) be considered under section 16(1)(e) of CEAA. This is a 'catch-all' provision that allows consideration of any matter that may be relevant to an assessment that is not already identified as such by the Act. For example, the Agency’s reference guide for the assessment of environmental effects on heritage resources provides that responsible authorities may, relying on section 16(1)(e), “choose to assess effects on physical and cultural heritage that result from a project but do not result from a change in the environment caused by the project”.

Information on how environmental effects may be scoped and evaluated for the purposes of an EIA is contained in a number of guidance documents, including a

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203 The full definition of the term is as follows: “‘Environmental Effect’ means, in respect of a project, (a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the Species at Risk Act, (b) any effect of any change referred to in paragraph (a) on (i) health and socio-economic conditions, (ii) physical and cultural heritage, (iii) the current use of lands and resources for traditional purposes by aboriginal persons, or (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or (c) any change to the project that may be caused by the environment, whether any such change or effect occurs within or outside Canada”: ibid., s. 2(1). “Environment” is defined to mean “… the components of the Earth, and includes (a) land, water and air, including all layers of the atmosphere, (b) all organic and inorganic matter and living organisms, and (c) the interacting natural systems that include components referred to in paragraphs (a) and (b)”: ibid.


205 See e.g. “Major Deficiencies Remain”, supra note 139 at 99.

document entitled: *A Guide on Biodiversity and Environmental Assessment.*\(^{207}\) This guide provides that when scoping environmental effects, a responsible authority or the Minister should first identify the potential environmental effects on biodiversity of the proposed project and then determine the spatial and temporal boundaries of the assessment.\(^{208}\) For example, the decision-maker should consider what species may be impacted by the project and how much of their habitat will likely be eliminated or altered.\(^{209}\) Consideration should then be given to the extent of these impacts. For example, the decision-maker should explore whether the impacts will be localized or whether the impacts might extend to the larger, regional ecosystem.\(^{210}\) If the potentially impacted species include migratory species, the spatial parameters of the assessment should reflect this fact. With respect to time parameters, the guide suggests considering historical trends in species and habitat loss.\(^{211}\)

3.4.3.2 Cumulative Effects

It has been argued that the most significant threat to the environment arises from the cumulative effects of existing and anticipated development, rather than from the environmental impacts of individual projects.\(^{212}\) It has been suggested, therefore, that identifying the projects and activities that should be included in a cumulative effects assessment is key to the government’s ability to influence development planning and limit environmental damage.\(^{213}\) The federal government appears to recognize the importance of cumulative effects because it has required that these effects be considered under CEAA.\(^{214}\) Green observes, however, that CEAA “provides no intelligible principle upon which the


\(^{208}\) *A Guide on Biodiversity*, *ibid.* at 4.


\(^{211}\) *Ibid.*

\(^{212}\) See “Major Deficiencies Remain”, *supra* note 139 at 92-93


\(^{214}\) See CEAA, *supra* note 1, s. 16.
responsible authority can base its decision of which other projects to take into consideration". The courts have confirmed that a responsible authority (or the Minister) is indeed afforded significant latitude under CEAA to include or exclude projects and other activities when performing a cumulative effects assessment. Green argues that the decision-maker can, as a result, "theoretically restrict its analysis to projects in the immediate area of the proposed project, or widen it to include projects at the other end of the country".

In 1994 the Federal Environmental Assessment Review Office (the Agency’s predecessor) recognized that techniques to address cumulative environmental effects were insufficient and a guide entitled: A Reference Guide for the Canadian Environmental Assessment Act: Addressing Cumulative Environmental Effects (the “Cumulative Effects Guide”) was prepared. The guide provides that although the phrase “cumulative environmental effects” is not defined in CEAA, there is assistance to be found in the definitions of “environment” and “environmental effect”. According to the guide, the effects to be considered are those expected to be produced by the project under review that will act in “combination” with the effects of other existing or future projects and activities. To act in combination with one another, effects must “accumulate” or somehow “interact”.

With respect to future effects, the Cumulative Effects Guide provides that, at a minimum, the effects of other projects that have been approved should be considered, but that it would be prudent to consider the effects of other projects that are in a government

215 Green, supra note 213 at 787.
216 See The Friends of West Country Trilogy, supra note 188.
217 Green, supra note 213 at 787.
219 Cumulative Effects Reference Guide, ibid. at 136-137
220 Ibid. at 137. See CEAA, supra note 1, s. 16(1)(a), which provides that an assessment must include consideration of the environmental effects of the project, including “any cumulative effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out” [emphasis added].
221 Cumulative Effects Reference Guide, ibid. at 137.
approvals process. The guide suggests that projects and activities not subject to an approval process should also be considered if there is a high degree of certainty that they will be carried out. The Cumulative Effects Guide emphasizes, however, that only those cumulative environmental effects that are “likely” need be considered. The guide confirms that there is no formula, but that thought should be given to both the quality and quantity of the evidence regarding future projects in determining whether to take these projects into account. The Agency’s Operational Policy Statement OPS-EPO/3-1999 provides the following additional guidance and clarification concerning future projects:

The Act does not require consideration of hypothetical projects, but [responsible authorities] may chose to do so at their discretion. Information concerning the cumulative effects of the project under assessment combined with hypothetical projects may contribute to future environmental planning. However, it should not be the determining factor in the environmental assessment decision under the Act.

The Cumulative Effects Guide recognizes that there will be uncertainty when attempting to assess cumulative effects (e.g., in respect of scientific methodologies and techniques, accuracy of data and knowledge of a particular environment). The guide advises that where uncertainty exists, it should be clearly stated in the assessment report. The guide also provides that “[a]vailable information and best professional knowledge and judgment should be used”. The guide acknowledges that in most circumstances “only qualitative assessments of cumulative environmental effects will be possible”.

The Cumulative Effects Guide suggests that follow-up programs in respect of cumulative effects

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222 Ibid. at 138.
223 Ibid.
224 Ibid. at 138.
225 Ibid. at 153.
227 Cumulative Effects Reference Guide, supra note 218 at 140.
228 Ibid. at 141.
229 Ibid. at 140-141.
230 Ibid. at 141.
may be appropriate where the findings of the cumulative effects assessment is characterized by uncertainty.\textsuperscript{231}

The Cumulative Effects Guide recognizes that the temporal and geographical boundaries used greatly affect the nature of a cumulative effects assessment. For example, if the boundaries are drawn widely, the assessment will be more superficial and entail a greater degree of uncertainty.\textsuperscript{232} If, however, smaller boundaries are used, detail is favoured to the exclusion of a broader consideration of effects.\textsuperscript{233} The guide provides that boundaries for assessments will necessarily vary depending upon the effects being considered. For example, the boundaries for assessing cumulative air impacts will differ from those used for an assessment of cumulative impacts on wildlife or water resources.\textsuperscript{234} The guide states that spatial boundaries should include the area likely to be affected that is beyond the actual site of the project and that temporal boundaries may extend beyond the period in which the proposed project is expected to be constructed and operated.\textsuperscript{235} Criteria for determining spatial and temporal boundaries include a consideration of what information is actually available and the likelihood that additional information may be obtained.\textsuperscript{236} The guide emphasizes that boundaries should be drawn in a reasonable fashion and that this may necessitate public input.\textsuperscript{237} The Cumulative Effects Guide also recognizes that “boundaries may influence the determination of significance, because a cumulative environmental effect may be very significant locally, but of little significance regionally”.\textsuperscript{238}

3.5 Nature of Environmental Effects

CEAA does not provide any specific guidance on how to determine whether a project under review is likely to cause significant adverse environmental effects. However, the document entitled: \textit{A Reference Guide for the Canadian Environmental Assessment Act}:
Determining Whether A Project is Likely to Cause Significant Adverse Environmental Effects
(the "Significance Guide") suggests the following (somewhat obvious) approach: (1) decide whether the environmental effects are "adverse"; (2) decide whether the adverse environmental effects are "significant"; and (3) decide whether the significant adverse environmental effects are "likely". It has been reported (and is worth emphasizing) that screenings, which comprise nearly all assessments, rarely result in a finding that there are likely to be significant adverse environmental impacts. Moreover, it has also been reported that all projects screened are approved. This pattern is troubling because the government itself recognizes that screenings apply to a wide range of projects that vary greatly in their potential for adverse environmental effects. It is also troubling because the Commissioner for the Environment and Sustainable Development has found that the information provided in many screening reports is not sufficient to enable one to actually ascertain whether all of the possibly significant impacts were considered during the assessment.

3.5.1 Whether Effects are Adverse

The Significance Guide provides that the usual manner of determining whether the environmental effects of a proposed project are "adverse" is to compare current environmental quality with anticipated post-project environmental quality. This can be accomplished, for example, by taking into consideration potential changes in the

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240 Boyd, supra note 139 at 152-53.

241 Ibid.


244 Significance Guide, supra note 239 at 187.
environment such as habitat loss or the pollution of waterways. To make a comparison, information on current environmental conditions collected through environmental monitoring prior to the construction of the proposed development is needed. The guide states that the project proponent should supply the information that is necessary to enable the responsible authority or Minister to make a finding on adversity.

3.5.2 Whether Effects are Significant

Although the Significance Guide provides that there is no mechanical way to determine significance, and that each assessment will be unique, the guide does emphasize that significance is determined after taking into account possible mitigation measures. The court in *Alberta Wilderness Assn. v. Express Pipelines Ltd.* confirmed the correctness of this approach, reasoning: “there can be no purpose whatever in considering purely hypothetical environmental effects when it is known and proposed that such effects can and will be mitigated by appropriate measures”.

The Significance Guide includes the following list of criteria that may be useful when characterizing the significance of a particular impact:

- **Magnitude:** An effect will be significant if it is “major or catastrophic”, but may be insignificant if it is “[m]inor or inconsequential”. Included in this analysis is a consideration of cumulative environmental effects.

- **Geographic extent:** Effects that are widespread may be considered significant while negative impacts affecting a relatively small area may not be significant.

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248 *Ibid.* at 186. This approach is in keeping with the express requirements of the Act, see CEAA, *supra* note 1, ss. 20 and 37.
250 *Significance Guide, supra* note 239 at 188.
Cumulative environmental effects should be considered when undertaking this analysis.\textsuperscript{253}

- \textit{Duration and frequency}: An effect may be significant if it is long-term or frequently occurring.\textsuperscript{254} Future adverse effects may also be viewed as significant, depending on the likelihood that these effects will occur.\textsuperscript{255}

- \textit{Reversibility}: An environmental effect that is reversible may be insignificant whereas an irreversible effect may be more significant.\textsuperscript{256}

- \textit{Ecological context}: If the environment is already compromised, an effect may be significant when it would otherwise not be characterized as such.\textsuperscript{257}

The Significance Guide suggests that it may also be useful when determining whether potential environmental effects are significant to consider whether the project will comply with federal, provincial and municipal standards, guidelines and objectives.\textsuperscript{258} If these are satisfied, the effects may be characterized as insignificant.\textsuperscript{259} The guide recognizes however that most effects are not governed by legislation or policy and, even where these apply, they are not necessarily sufficient to protect the environment.\textsuperscript{260}

Quantitative risk assessment may also be used in deciding when environmental effects are significant.\textsuperscript{261} According to the Significance Guide, quantitative risk assessment “is often used to determine the significance of the risks to human health from ionizing radiation and carcinogenic chemicals. Its use is restricted to agents that have predictable dose-response (or exposure-effect) relationships”.\textsuperscript{262} This risk assessment

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{253} \textit{Ibid.}
  \item \textsuperscript{254} \textit{Ibid.}
  \item \textsuperscript{255} \textit{Ibid.}
  \item \textsuperscript{256} \textit{Ibid.}
  \item \textsuperscript{257} \textit{Ibid.}
  \item \textsuperscript{258} \textit{Ibid. at 190-191.}
  \item \textsuperscript{259} \textit{Ibid. at 190.}
  \item \textsuperscript{260} \textit{Ibid. at 190-191.}
  \item \textsuperscript{261} \textit{Ibid. at 191.}
  \item \textsuperscript{262} \textit{Ibid.}
\end{itemize}
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technique involves a determination of “acceptable risk”, which may be indicative of the significance of an effect. In other words if there is an acceptable risk, the environmental impact may be characterized as insignificant.

3.5.3 Whether Significant Effects are Likely

The Significance Guide provides there are two criteria considered helpful when determining whether significant adverse environmental effects are “likely”. The first is the probability of occurrence. If there is a high probability that significant adverse environmental effects will occur, they are likely. Conversely, if there is a low probability that such effects will occur, they are unlikely. The guide recommends that, whenever possible, project proponents should be required to use statistical methods to determine the likelihood of adverse environmental effects. Where it is not possible or feasible to use numerical methods, the guide provides that the responsible authority or Minister “must use a qualitative approach to determining likelihood, based on their best professional judgement”.

3.6 Need for the Project and Alternatives

Section 16(1)(d) of CEAA allows for the consideration of any other matters relevant to an assessment, such as the need for the project and alternatives to the project. Section 16(2) requires that the purpose of the project and alternatives to the project be considered where the project is undergoing a comprehensive study, mediation or panel review. Only those alternatives that are technically and economically feasible need to be considered. The project proponent is responsible for presenting evidence on need and alternatives. There is no guidance in the Act on this aspect of an assessment. Case law indicates that where a responsible authority chooses to consider project need and alternatives in the context of a screening, the authority will be permitted a great deal of discretion in how

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263 Ibid. at 191-192.
264 Ibid. at 193.
265 Ibid.
266 Ibid. at 194.
267 Ibid.
268 CEAA, supra note 1, s. 16(2)(b).
it approaches the assessment. It is also indicated that the project alternative with the least environmental risk need not be selected.

3.7 Follow-up Programs and Adaptive Management

A "follow-up program" is defined in CEAA as a program for verifying the accuracy of the assessment of a project and determining the effectiveness of any mitigation measures employed. Although under the Act follow-up programs are required for assessments that are conducted by way of comprehensive study, panel review or mediation, there is no requirement to implement a follow-up program after a project has been screened. It has been reported that approximately five per cent of screened projects include follow-up programs.

A responsible authority has discretion with respect to the content and scope of follow-up programs. CEAA does not provide any specifics with respect to follow-up programs, nor do any of the regulations under the Act. CEAA does however allow the responsible authority to impose follow-up measures under federal legislation that the authority is not acting under. For example, Fisheries and Oceans Canada ("DFO") as the responsible authority for a particular project could issue a permit under the Fisheries Act that includes follow-up measures directed at the protection of migratory birds; species typically dealt with by the Canadian Wildlife Service under the authority of the Migratory Birds Convention Act, 1994.

CEAA has been amended to provide that the results of a follow-up program may be used to implement "adaptive management" or to improve the quality of EIA.

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271 CEAA, supra note 1, s. 2(1).
272 Ibid., ss. 38(1) and (2).
273 Boyd, supra note 139 at 153.
274 CEAA, supra note 1, s. 38(3).
275 R.S.C. 1985, c. F-14
276 S.C. 1994, c. 22.
generally.277 This reference to adaptive management was added to the Act in 2003.278 Adaptive management, according to the federal government, involves "the implementation of new or modified mitigation measures over the life of a project to address unanticipated environmental effects" and allows for the "adoption of improved mitigation measures (e.g., due to technological advances) over the life of a project".279 The government is of the view that an effective follow-up program will determine the need for adaptive management.280 It has been argued that such post-decision monitoring to verify predictions and allow for the adjustment of mitigations measures is essential to the EIA process.281

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277 CEAA, supra note 1, s. 38(5).
278 See S.C. 2003, c. 9, s. 18.
279 "Explanation of CEAA Amendments", supra note 130 at 115.
280 Ibid.
4. THE HIGHWOOD DECISION

4.1 Choice of CEAA Decision

As discussed in Chapter 3 (and will be further discussed in Chapter 5), a significant amount of discretion is delegated to responsible authorities carrying out EIAs under CEAA. The Canadian courts have (as previously indicated) been reluctant to undertake detailed judicial reviews of how discretion has been exercised by decision-makers under the Act. In short, the courts have limited their reviews to ensuring that CEAA is applied (when it must be) and that responsible authorities have followed the process set out in the Act – regardless of how vague the provisions of the Act might be.\(^{282}\) As Green has observed, the degree of discretion delegated to responsible authorities and the limits of judicial review give rise to the potential for inconsistent decisions to be made under CEAA.\(^{283}\)

An example of this inconsistency can be seen in the decisions of the Federal Court (Trial Division) in *Friends of the West Country Assn. v. Canada (Minister of Fisheries and Oceans)*\(^ {284}\) and *Manitoba’s Future Forest Alliance and Donald V. Sullivan v. The Minister of the Environment et al.*\(^ {285}\) The court considered similar facts in these cases (both involved the assessment of proposed bridges in logging areas), yet came to a different conclusion in each.\(^ {286}\) In *Friends of the West Country*, the court held that the responsible authority was required under CEAA to include both the bridge and the related road in its assessment. In *Manitoba’s Future Forest Alliance*, the court deferred to the responsible authority’s decision not to include in its assessment the road associated with the proposed

\(^{282}\) See *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)* (1999), 175 F.T.R. 122 (T.D.), aff’d [2001] 2 F.C. 461 (C.A.); and *Inverhuron & District Ratepayers’ Assn.*, supra note 270. Note that the approach of the Canadian courts differs from that of the American courts. The courts in the U.S. have engaged in more detailed reviews and have interpreted the laws governing EIAs in such a way that the cases provide a more coherent body of law concerning assessment requirements: see Jeffery, *supra* note 170 at 1071-72.

\(^{283}\) Green, *supra* note 213 at 785.

\(^{284}\) *Supra* note 188.


\(^{286}\) See Green, *supra* note 213 at 787-88 for a more thorough discussion of the inconsistencies found in these cases.
bridge. As mentioned in Chapter 3, the Federal Court of Appeal in *Friends of the West Country* ultimately found (contrary to the trial court’s decision) that the responsible authority was entitled under CEAA to exclude the associated road from its consideration of the bridge.

Given the amount of discretion delegated responsible authorities under CEAA and the deference afforded these decision-makers by the courts, this thesis will focus on one decision, rather than attempt to catalogue numerous decisions in an effort to identify patterns in the practices of responsible authorities. It is most productive to review in detail a single decision that addresses a significant and controversial project (*i.e.*, a project considered by a review panel) where the decision-makers conclude that certain elements of the proposed project should be approved while other elements should not. This type of decision is useful because it reveals a broad spectrum of reasoning, thus providing sufficient facts upon which to apply and evaluate eco-pragmatism. The decision selected (the Highwood Decision) has these characteristics and is particularly useful because it involves a situation of complicated resource management that involves competing demands. The decision is summarized below.

### 4.2 Introduction

The Highwood and Little Bow river basins are located in southwestern Alberta. The headwaters of the Highwood River are situated along the eastern slopes of the Rocky Mountains and the river drains an area of approximately 4000 km² before flowing into the Bow River. ⁴⁸⁷ The Highwood River is characterized by excellent water quality and the river supports one of the most valuable sport fisheries in Alberta. ⁴⁸⁸ The Highwood River’s flows are seasonally variable as a consequence of a large spring freshet resulting from snowmelt. ⁴⁸⁹ The river is also characterized by annual variability, due to yearly fluctuations in snow pack and precipitation. ⁴⁹⁰ The Highwood basin is prone to both flooding and drought. ⁴⁹¹

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²⁸⁷ Highwood Decision, *supra* note 8 at 4-2.
²⁸⁹ *Ibid.* at 8-6 and 4-2.
²⁹⁰ *Ibid.* at 4-3.
²⁹¹ *Ibid.* at 4-4 and 8-6.
Although the Little Bow River drains an area that is approximately 50 per cent larger than the Highwood River basin, the Little Bow River captures significantly less water.\textsuperscript{292} Flows from the Little Bow River and Mosquito Creek (the Little Bow’s main tributary) amount to less than 10 per cent of the flow of the Highwood River.\textsuperscript{293} The Little Bow River captures less water because it is located primarily on the prairies and receives less annual precipitation.\textsuperscript{294} Like the Highwood River basin, the Little Bow River basin is drought prone.\textsuperscript{295}

Aboriginal groups have traditionally used the Little Bow River basin.\textsuperscript{296} By the late 1800s, Europeans had settled both the Highwood and Little Bow river basins and were attempting to manage surface water in order to address episodes of flooding and drought.\textsuperscript{297} Since as early as 1898, water has been diverted from the Highwood River to the Little Bow River to enhance the flows of the latter for domestic use and agricultural production.\textsuperscript{298} The domestic, municipal and agricultural users of water in the Little Bow River basin have always considered these diversions essential.\textsuperscript{299} The flow of the Little Bow River and the riverine environment it supports are artificial by-products of intense water management, and the ecosystem is currently more rich than it would be naturally.\textsuperscript{300} The diverting of water to the Little Bow River had a minimal impact on the Highwood River until the 1970s, when mechanized irrigation was introduced in the Little Bow River Basin.\textsuperscript{301} At this time there also began a period of low water flow and drought.\textsuperscript{302} The low flows of the

\textsuperscript{292} Ibid. at 4-3.
\textsuperscript{293} Ibid.
\textsuperscript{294} Ibid. at 8-6.
\textsuperscript{295} Ibid.
\textsuperscript{296} Ibid. at 4-3 and 4-4.
\textsuperscript{297} Ibid.
\textsuperscript{298} Ibid. at 2-1.
\textsuperscript{299} Ibid. at 3-1.
\textsuperscript{301} Highwood Decision, \textit{supra} note 8 at 3-1.
\textsuperscript{302} Ibid.
1970s and the 1980s had a negative impact on the aquatic environment and reduced the water available to all users along the Little Bow River. \(^{303}\)

The quantity of water diverted from the Highwood River to the Little Bow River is generally considered to be less of an issue than is the timing of these diversions. \(^{304}\) Additional water is usually required in the Little Bow River basin in the summer months when the Highwood River is at its lowest. \(^{305}\) The greatest volume of water is diverted between May and September. \(^{306}\) This coincides with the irrigation season. \(^{307}\) It also overlaps with the period (between July and August) when water is needed in the Highwood River to maintain water temperatures, dissolved oxygen levels and physical habitat for fish. \(^{308}\) In the past, fish kills have been associated with low flows, high air temperatures and low oxygen levels. \(^{309}\) Although there is some uncertainty in the relationship between diversion flows and water quality, \(^{310}\) two general observations have been made. First, diversions do not have a beneficial impact on the Highwood River and, second, it is more likely that harmful temperature changes will occur as flow is decreased during diversions. \(^{311}\)

Most of the time the Highwood basin has adequate water, however, low flow events give rise to drought conditions and water demand exceeds supply. \(^{312}\) Although it is not possible to predict precisely when droughts will occur, they tend to occur once every 20 to 40 years. \(^{313}\) Dry periods have occurred close together in the past, which is particularly serious from both a water quantity and quality perspective. \(^{314}\) Diversions have been
frequently restricted in the past in order to protect the Highwood River.\textsuperscript{315} When restrictions are imposed agricultural production in the Little Bow River decreases, municipalities suffer a decline in water quality and the Little Bow River basin ecosystem becomes stressed due to the lack of water.\textsuperscript{316} Even with diversions from the Highwood River, the water supply in the Little Bow River basin has not been considered reliable.\textsuperscript{317} A moratorium on irrigation expansion in the Little Bow River basin was imposed in 1977, notwithstanding the unexploited agricultural capacity of the area.\textsuperscript{318} The moratorium was lifted in 1981, but reinstated in 1983.\textsuperscript{319} The moratorium has had the effect of capping development in the basin that depends on the intensive use of water.\textsuperscript{320}

Although demand for water in the Highwood River basin is small compared to the demand placed on the Little Bow River basin, consumption of water in the Highwood basin has been increasing since the 1970s.\textsuperscript{321} Much of the water is used for industrial, municipal and domestic purposes, rather than for irrigation.\textsuperscript{322} In 1985 a moratorium on irrigation licences was imposed and, in 1990, the moratorium was extended to other types of water licenses.\textsuperscript{323} Notwithstanding the limited and variable water supply, there exists an expectation that the population of both basins will continue to grow and agricultural production will expand.\textsuperscript{324}

\textsuperscript{315} Ibid. at 3-1.
\textsuperscript{316} Ibid.
\textsuperscript{317} Ibid.
\textsuperscript{318} Ibid. at 3-1 and 4-5.
\textsuperscript{319} Ibid. at 4-5.
\textsuperscript{320} Ibid. at 4-7 and 8-7.
\textsuperscript{321} Ibid. at 4-5.
\textsuperscript{322} Ibid. at 4-5 and 4-6.
\textsuperscript{323} Ibid. at 4-6. In August 2006, the Alberta government announced the implementation of a Crown reservation of water under the South Saskatchewan River Basin Water Management Plan. Under the plan, the government is no longer issuing new water licences for the Oldman, Bow and South Saskatchewan sub-basins. The stated intent is to protect the resource and encourage Albertans to use water more efficiently. Unallocated water has been placed under a Crown reservation and water will only be allocated from this reservation for the following: water conservation objectives, water storage of peak flow, licences that were pending at the time the reservation was put into place, and First Nations Reserves: \textit{News Release: Alberta implements water management plan for the South Saskatchewan River Basin (August 30, 2006)}, online: Government of Alberta <http://www.gov.ab.ca/acn/200608/2043260C967C4-CBB8-C14F-F0EFFFCE8E-F4EF81.html#backgrounder> (date accessed: 22 January 2007).
\textsuperscript{324} Highwood Decision, \textit{ibid.} at 3-2 and 3-3.
Alberta Environment, a department of the Government of Alberta, is responsible for issuing water licences and controlling water diversions from the Highwood River to the Little Bow River.\(^{325}\) The works constructed to carry out these diversions are governed by the *Diversion Operating Guidelines* (the “Diversion Guidelines”).\(^{326}\) Alberta Environment has repeatedly revised these guidelines.\(^{327}\) Revisions are undertaken to reflect changes in water usage and supply, as well as environmental conditions such as water temperatures and dissolved oxygen levels.\(^{328}\) Alberta Environment has adopted somewhat of a cautionary approach\(^ {329}\) and the Diversion Guidelines typically restrict water diversions during low flows periods to protect the Highwood River.\(^ {330}\) Despite its efforts, the provincial government has acknowledged that its past water management practices have adversely affected the Highwood River.\(^ {331}\)

4.3 The Little Bow Project/Highwood Diversion Plan

In 1988 the Government of Alberta announced that it would implement a system to store spring run-off in the Highwood River and Little Bow River systems for subsequent use in the Little Bow River basin during low flow periods.\(^ {332}\) The goal of the new system is to address existing water supply challenges and to accommodate an increase in water consumption.\(^ {333}\) At the time of the announcement, the region had been experiencing periodic water shortages and the number of competing demands meant that not all water users had a reliable supply.\(^ {334}\) Conflict existed between satisfying the human demand for

\(^{325}\) *Ibid.* at 8-7. Note that at the time of the Highwood Decision, “Alberta Environment” was named “Alberta Environmental Protection”. For ease of reference, the department’s current name is used throughout this thesis.

\(^{326}\) *Ibid.*

\(^{327}\) *Ibid.* at 8-7 and 4-10.

\(^{328}\) See *Ibid.* at 4-10 to 4-13.

\(^{329}\) *Ibid.* at 4-17.


\(^{331}\) *Ibid.* at 8-8.


\(^{333}\) See *Ibid.* at 3-1.

\(^{334}\) *Ibid.* at 3-2.
water and ensuring sufficient water to maintain aquatic habitat, particularly during hot and dry periods.335

A water management project and plan for conveying and storing water diverted from the Highwood River during high flow periods was eventually developed and announced in 1996.336 Referred to as the Little Bow Project/Highwood Diversion Plan (the “Project” or the “Little Bow/Highwood Project”), the undertaking is intended to ensure a reliable water supply for the maintenance and development of agriculture, industry and communities.337 The Project is to remedy the historic pattern of over allocation, while at the same time allowing additional water to be diverted from the Highwood River to accommodate a future increase in irrigation in the Little Bow River basin.338

The following components comprise the Project (see Figure 1):

- **Little Bow River Dam and Reservoir**: Construction of a dam (25 m high) and a reservoir (capable of holding 61,675 cubic decameters of water) approximately 20 km west of the town of Champion. The Little Bow River Dam will be filled from natural runoff in the Little Bow River basin and water diverted from the Highwood River.

- **Highwood Diversion Works and Canal**: Construction of a canal and diversion works in the town of High River. These works triple the capacity of the existing works (from 100 cfs to 300 cfs), thereby increasing the volume of water available to be diverted from the Highwood River to the Little Bow River during peak flows in the spring. The increased capacity will result in less demand during the summer when the flows of the Highwood River tend to be low.339

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335 Ibid.
337 *Highwood Decision*, *supra* note 8 at 3-1.
338 Ibid. at 4-29.
• **Clear Lake Diversion Works and Canal:** Construction of diversion works and a canal approximately 15 km east of the town of Stavely. The canal (10 km in length) will allow Clear Lake and a number of wetlands along its route to be filled by natural spring run-off when flows in the nearby Mosquito Creek are high. Low flow conditions contributed to the disappearance of Clear Lake in 1985.340

• **Expansion of Woman’s Coulee Reservoir:** Enlargement of the existing Woman’s Coulee Reservoir.341 The reservoir will be increased from 361 to 6,283 cubic decameters of water. This is accomplished through the construction of upper and lower dams and a return canal to the Highwood River. The Woman’s Coulee Reservoir was originally constructed in 1949 and upgraded after being taken over by the Government of Alberta in 1977.342

• **Highwood Diversion Plan and Expanded Diversion Plan:** The Project includes an operating plan for the proposed components and the already existing Woman’s Coulee Diversion (the **“Highwood Diversion Plan”**). Because it was predicted that the plan would result in water deficits an additional plan (the **“Expanded Diversion Plan”**) was also developed.343 This supplemental plan relies on expanded water storage in Woman’s Coulee (as described in the preceding bullet) to address the predicted deficits.344 The diversion plans shift water diversions from low flow periods (during the summer) to periods of high run-off.345

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340 Highwood Decision, *supra* note 8 at 3-1 and 4-6.
341 At the time of the Highwood Decision the coulee was referred to as the “Squaw Coulee”. Many considered the name offensive, see *ibid.* at 4-4 and 8-47. Following the release of the Highwood Decision, the area was renamed the “Woman’s Coulee”. The current name is used in this thesis.
342 See *ibid.* at 4-5.
Figure 1: Little Bow Project and Highwood Diversion Plan Map

4.4 Project Approvals and the Applicant

The Government of Alberta initiated the Project and is the party ultimately responsible for it. Alberta Transportation and Infrastructure (the “Applicant”) assumed responsibility for constructing the Project. The Applicant also assumed the role of Project proponent and responsibility for obtaining the necessary regulatory approvals. Following construction, Alberta Environment assumes operational control of the Project.

A number of federal and provincial authorizations were required in connection with the Project before the Applicant could commence construction. In particular, approval was needed under section 4(d) of the Alberta Natural Resources Conservation Board Act (the “NRCBA”). This Act creates the Natural Resources Conservation Board (“NRCB”), whose purpose it is to review projects that have the potential to affect Alberta’s natural resources. Section 4(d) provides that water management projects require approval under the Act. Before granting such an approval, the NRCB must be satisfied that the project is in the public interest, having regard to the social and economic effects of the project and the anticipated effect of the proposed project on the environment.

The Project also required certain approvals under the federal Fisheries Act and Navigable Waters Protection Act because of the potential for the Project to impact

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346 See ibid. at 1-2. Note that at the time of the Highwood Decision, the Applicant was named “Alberta Public Works, Supply and Services”; it was renamed “Alberta Infrastructure”, and then became “Alberta Transportation”. The department is now referred to as “Alberta Transportation and Infrastructure”. For ease of reference, the Applicant is referred to by its current name in this thesis.

347 See The Province of Alberta, Natural Resources Conservation Board Act, Natural Resources Conservation Board, In the Matter of a project of Alberta Public Works, Supply and Services for approval to construct a water management project (the project) to convey and store water diverted from the Highwood River, Approval No. 8, ibid. at B-3 [hereinafter Approval No. 8].

348 See Highwood Decision, ibid. at 1-1. At the time of the decision, the NRCBA was cited to S.A. 1990, c. N-5.5; it is now R.S.A 2000, c. N-3. The relevant section reference [i.e., s. 4(d)] remains the same. Subsequent references to the NRCBA in this thesis are cited to R.S.A 2000, c. N-3. Note that there are a number of other statutes and policies that apply in respect of the Project, and other approvals were necessary: see ibid. at 2-1 to 2-13. These additional approvals are not discussed.

349 NRCBA, ibid., s. 2.

350 Supra note 275, s. 35(2). As will be discussed, this section requires authorization be obtained under the Fisheries Act prior to the construction of works that affect fish habitat.

351 R.S.C. 1985, c. N-22, s. 5(1). Section 5(1) prohibits the construction of works in, on, over, under, through or across navigable waters without first obtaining approval.
fisheries resources and transportation. The need for these approvals “triggered” the application of CEAA, and DFO (which became the responsible authority for the purposes of the Act) initiated a comprehensive study.\textsuperscript{352} The comprehensive study process was ultimately converted to review by an environmental assessment panel. The Minister of Fisheries and Oceans initiated this change (or upgrade) in the type of assessment because of concerns over the potential environmental effects of the Project and the potential for the Project to impact the lands and traditional values of First Nations.\textsuperscript{353} Because of overlapping federal and provincial jurisdiction, the Minister of Fisheries and Oceans requested that the review of the Project under CEAA be joined with the NRCB’s review.\textsuperscript{354} A Joint Federal/Provincial Review Panel (the “\textbf{Panel}”) was constituted to deal with both the NRCBA and CEAA processes and a public hearing concerning the Project was held from November 12, 1997 to January 9, 1998.\textsuperscript{355} The Panel made public its findings in a report issued in May of 1998 (\textit{i.e.}, the Highwood Decision or the “\textbf{Report}”).\textsuperscript{356}

The Report sets out the findings, recommendations and conditions of the Panel under both the NRCBA and CEAA. In short, the Panel makes a determination as to whether the Project is in the public interest under the NRCBA and makes recommendations regarding the granting of approvals under the \textit{Fisheries Act} and \textit{Navigable Waters Protection Act}.\textsuperscript{357} For those matters falling under the NRCBA, the Panel’s approval of the Project is subject to the consent of Alberta’s Lieutenant Governor in Council, and any conditions imposed by the Panel are binding on the Applicant.\textsuperscript{358} Pursuant to CEAA, the Panel makes recommendations to the federal Minister of Environment and DFO.\textsuperscript{359} It should be emphasized that like any other panel constituted for the purpose of applying CEAA, the

\textsuperscript{352} See \textit{Highwood Decision}, \textit{supra} note 8 at 1-1,1-5 and 2-8.  
\textsuperscript{353} \textit{Ibid.} at 1-1.  
\textsuperscript{354} \textit{Ibid.} Joint Federal/Provincial Review Panels are created through an agreement between both levels of government. These agreements address the constitution of the panel, cost-sharing arrangements, conduct of the proceedings and related administrative issues.  
\textsuperscript{355} \textit{Ibid.} at 1-2, 1-5 and 8-2.  
\textsuperscript{356} Note that as of January 1, 2007 there do not appear to be any scholarly articles referring in any detail to the Highwood Decision.  
\textsuperscript{357} Highwood Decision, \textit{supra} note 8 at 2-11.  
\textsuperscript{358} \textit{Ibid.} at 1-2.  
\textsuperscript{359} \textit{Ibid.}
Panel does not have the jurisdiction to grant approvals under the *Navigable Waters Protection Act* or the *Fisheries Act*. Rather, the need for these approvals triggers the application of CEAA, and CEAA is applied in an effort to ensure that environmental effects are considered before the appropriate authorities grant these federal approvals.\(^{360}\) It should also be emphasized that it can prove difficult when reviewing the Report to determine whether a particular aspect of the Panel's reasoning is based on CEAA or on the NRCBA. The Panel itself states "it will not make continuous distinctions throughout [the] report between the powers and mandates of each jurisdiction".\(^{361}\)

**4.5 Panel's View of Current Water Resource Management**

The Panel's evaluation of the Project included an assessment of Alberta Environment's pre-Project water management practices. This evaluation provided part of the baseline from which to begin the analysis of the Project's potential environmental impacts. The evaluation revealed that managing water in the Highwood and Little Bow basins to both protect the environment and meet human demands has proven difficult.\(^{362}\) The Panel observes that "[a]ttempts to manage the scarce resource among competing demands have not met and can not meet all demands ... [a]t times there is just not enough water".\(^{363}\) The Panel finds that the Highwood and Little Bow River basins have been managed in such a way that the available water has been over allocated.\(^{364}\)

The Panel describes Alberta Environment's past water management practices as questionable because the department has allowed water to be withdrawn or diverted from the Highwood River during low flows, which can result in a negative impact on fish habitat.\(^{365}\) It appears to the Panel that such practices are contrary to provincial policies, the federal *Policy for the Management of Fish Habitat* and section 35(1) of the *Fisheries Act*,

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\(^{360}\) The application of the *Navigable Waters Protection Act* is beyond the scope of this thesis and will not be discussed in any detail.

\(^{361}\) *Highwood Decision*, *supra* note 8 at 1-2.

\(^{362}\) See *ibid.* at 4-13.


\(^{364}\) *Ibid.* at 4-2.

\(^{365}\) *Ibid.* at 8-8 and 4-19.
which provides that it is an offence to carry on any work or undertaking that results in the “harmful alteration, disruption or destruction of fish habitat”. In the Panel’s view, it constitutes the destruction of fish habitat to remove water from a river if fish habitat is severely diminished.

The Panel also observes that the Highwood River has been managed without an overall management plan and management objectives, and without an understanding about how to manage current and future demands for water. Most of the time there is sufficient water in the Highwood basin to protect environmental values and meet consumptive demands. However, under the current circumstances, the Panel is of the view that during low flow events (i.e., droughts) those with existing licenses would not have their needs met and some of these users would suffer social and economic hardship. Moreover, in the case of a serious drought, even domestic and municipal users (who enjoy priority rights to water) might be at risk.

The Panel observes that if all of the water licence commitments were satisfied and the Diversion Guidelines followed, the “instream flow need” (or “IFN”) requirements developed under the South Saskatchewan River Basin Water Management Policy would not be met. In general terms, an IFN calculation identifies the quantity and quality of water necessary to sustain a healthy aquatic environment and/or meet human needs. IFN requirements and the policy are discussed in further detail below. Under low flow conditions, no water could be diverted to licence holders if the IFN were to be protected. Therefore, meeting the IFN during periods of drought would mean that water is unavailable for human use.

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366 Fisheries Act, supra note 275 and ibid. at 8-8.
367 Highwood Decision, ibid. at 4-19.
368 Ibid. at 8-8 and 8-9.
369 Ibid. at 4-39.
370 Ibid. at 8-9.
371 Ibid.
372 Ibid.
373 Ibid.
374 Ibid.
According to the Panel, a failure to meet the IFN is not acceptable because it is contrary to sustainable development principles and Fisheries Act requirements. The Panel is of the view, however, that satisfying basic human needs for water is also essential. The Panel observes that “[p]ast resource allocations require current resource managers to meet basic human requirements for drinking water and to honour licensed water rights knowing that in doing so they are risking the habitat that supports a world class sport fishery”. The Panel finds that IFN requirements and water for basic human needs “ought not to be played off against each other”.

The Panel is of the opinion that without further action, there can be no lifting of the 1983 moratorium. In addition, the Panel believes that if extremely dry conditions occur, the existing situation “is intolerable and does not reflect sound management”. The Panel finds that “attempts to resolve water shortages that inherently involved trade offs between criteria that cannot and should not be compromised, were fundamentally flawed”. More specifically, “the Panel does not believe that it is appropriate to attempt to trade-off water rights protected in laws and provincial policies, domestic and municipal water requirements, and IFN supported by federal laws”. Ultimately, the Panel concludes that it is not acceptable to continue current management practices into the future.

In keeping with its characterization of Alberta Environment’s water management practices, the Panel accepts the Applicant’s arguments regarding the need for the Project and its justification. The Panel is of the view that some manner of water management project is required in the Highwood, Little Bow and Mosquito Creek basins in

375 Ibid. at 8-9 and 4-41.
376 Ibid. at 4-41.
377 Ibid. at 8-9.
378 Ibid.
379 Ibid.
380 Ibid.
381 Ibid. at 8-11.
382 Ibid.
383 Ibid. at 4-19.
384 Ibid. at 8-3.
order to address over allocation issues.\textsuperscript{385} The Panel states that it recognizes the need to protect the IFN requirements of the Highwood River in order to safeguard water quantity and quality, as well as the need to both protect and increase water supply for human use and consumption.\textsuperscript{386}

4.6 Panel Imposed Threshold for Detailed Assessment

The Panel, employing sustainable development as its frame of reference, identifies three key principles that serve as a threshold for further consideration of the Project’s effects.\textsuperscript{387} The Panel articulates these principles (or criteria) as follows:

First, water management projects must respect existing riparian rights and water licenses, and should not result in loss or injury to existing water rights.

Second, water management projects must be able to meet basic environmental criteria to avoid significant adverse effects.

Third, water management projects must be able to meet current and future needs for domestic, riparian, and municipal needs, and other consumptive uses.

These environmental, social, and economic considerations are basic to the determination of the public interest. A project must be able to meet these criteria to be worthy of detailed consideration by the Panel with respect to project effects.\textsuperscript{388}

As will be discussed below, the Panel finds that the Applicant’s proposed operational plans for diverting water during low flows do not meet its stated threshold and would not be considered further. The Panel concludes, however, that the structural elements of the Little Bow River Dam and Reservoir, the Highwood Diversion Works and Canal, and the Clear Lake Diversion Works and Canal (the “Three-component Project” or “TCP”) can be considered independently of the diversion plans and that these aspects of the Project do meet the three criteria of sustainability.\textsuperscript{389} Accordingly, the Panel went on to consider the TCP in detail.

\textsuperscript{385} Ibid.
\textsuperscript{386} Ibid.
\textsuperscript{387} Ibid. at 8-5
\textsuperscript{388} Ibid.
\textsuperscript{389} Ibid. at 4-38.
4.7 Proposed Diversion Plans

In 1990 the Government of Alberta introduced the *South Saskatchewan River Basin Management Policy*. The policy addressed IFNs for rivers within the South Saskatchewan basin. As indicated above, an IFN calculation determines the “amount of water, flow rate, water level, or water quality that is required in a river ... to sustain a healthy aquatic environment or to meet human needs such as recreation, navigation, waste assimilation, or aesthetics”. The policy set out two categories of IFN. The first identified *preferred* flows, which are intended to be met most of the time and serve to protect desirable instream uses. The second defined *minimum* flows, which are sufficient to protect basic water quality during drought conditions.

In connection with the policy, a “Preliminary IFN” was developed for the lower Highwood River. The Preliminary IFN included both a preferred flow and minimum flow calculation. The former was intended to produce the maximum physical fish habitat, while the latter identified those flows sufficient to prevent fish kills. The IFN calculations were the responsibility of the Technical Sub-Committee (the “TSC”) of the Highwood River Public Advisory Committee. The Preliminary IFN developed by the TSC was used to prepare an operating plan for the proposed components of the Project and the existing Woman’s Coulee Diversion. Because it was predicted that this plan (i.e., the Highwood Diversion Plan) would result in IFN deficits, the Expanded Diversion Plan was

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391 Current Basin Plan, *ibid.* at 23.

392 Highwood Decision, *supra* note 8 at 4-20.

393 Ibid.

394 Ibid.

395 Ibid.

396 Ibid. at 4-25.

397 Ibid. at 4-20. The TSC included representatives of Trout Unlimited, the Little Bow Water Users Association, the Lower Highwood Residents’ Association, and the Highwood Irrigators.

398 Ibid. at 4-29.
also developed.\textsuperscript{399} This supplemental plan relied on an expansion of the Woman's Coulee Reservoir to address water deficits.\textsuperscript{400} In essence, the plans would have the effect of shifting diversions from low flow periods (during the summer months) to periods of high run-off.\textsuperscript{401}

During the development of the Preliminary IFN, the TSC found that consumptive demands could not be met if the IFN were to be fully protected and it requested that government lower the standard of environmental protection.\textsuperscript{402} Because compromises were worked into the calculation, the Panel views the IFN arrived at by the TSC as a determination of "instream flow objectives" (or "\textbf{IFOs}")\textsuperscript{403}, rather than a true IFN.\textsuperscript{404} The Panel explains that while a scientifically derived IFN will provide a science-based benchmark to consider consumptive use trade-offs against, an IFO represents a compromise between consumptive demands and actual instream needs\textsuperscript{404}. The Panel finds that the Applicant's arguments regarding the environmental acceptability of the diversion plans questionable because, according to the Panel, the "IFO itself is a compromise and any failure to meet this objective is twice removed from the IFN".\textsuperscript{405}

The Panel observes that the Highwood Diversion Plan would not meet the minimum Preliminary IFN 100 per cent of the time; and less than 50 per cent of the time in August through October.\textsuperscript{406} Moreover, if a scientific IFN were used instead as the measure, the results would be worse.\textsuperscript{407} The Expanded Diversion Plan and the Expanded Woman's Coulee, which were proposed as a means of dealing with the failure of the Highwood Diversion Plan to meet the Preliminary IFN, would meet the minimum Preliminary IFN, but they would not satisfy an IFN based on science.\textsuperscript{408}

\begin{itemize}
\item \textsuperscript{399} \textit{Ibid.} at 8-11.
\item \textsuperscript{400} \textit{Ibid.} at 4-30.
\item \textsuperscript{401} \textit{Ibid.}
\item \textsuperscript{402} \textit{Ibid.} at 4-28.
\item \textsuperscript{403} \textit{Ibid.}
\item \textsuperscript{404} \textit{Ibid.} at 4-27 to 4-28.
\item \textsuperscript{405} \textit{Ibid.} at 4-28.
\item \textsuperscript{406} \textit{Ibid.} at 4-33.
\item \textsuperscript{407} \textit{Ibid.}
\item \textsuperscript{408} \textit{Ibid.}
\end{itemize}
In addition to concerns over how the Preliminary IFN was arrived at, analysis presented during the hearing revealed that under the Highwood Diversion and Expanded Diversion plans irrigators located in certain areas would experience an increase in water deficits.\textsuperscript{409} These deficits would occur because of an emphasis on maintaining the Preliminary IFN.\textsuperscript{410} Although the Applicant downplayed these deficits, the Panel finds that the Applicant's assessment of risk was incorrect and that the deficits were more serious than the Applicant perceived them to be.\textsuperscript{411} For example, the Applicant argued that water shortages are voluntarily shared among irrigators under Alberta Environment's current water mastering practices, with the effect that the impacts are diluted and the harms on individual irrigators reduced.\textsuperscript{412} However, evidence at the hearing indicated that junior licensees bear a greater burden when water shortages occur than do more senior irrigators.\textsuperscript{413} The Panel comments that "creating deficits larger than those experienced before the project for certain water users, while reducing or eliminating deficits for others and creating opportunities for irrigation expansion, is inappropriate".\textsuperscript{414} The Panel concludes, therefore, that the diversion plans fail to respect existing water rights and, as a result, cannot satisfy its sustainability threshold.\textsuperscript{415}

The Panel also considered whether the Highwood Diversion and Expanded Diversion plans will meet both current and future needs for consumptive purposes (e.g., domestic, riparian, municipal and industrial).\textsuperscript{416} Even with implementing the Expanded Diversion Plan, river flows would be low and conveyance flows not always maintained.\textsuperscript{417} (Conveyance flows refer to the amount of water necessary to ensure that water can be physically withdrawn from a river, \textit{i.e.}, pump intakes are submerged, and to provide for

\textsuperscript{409} \textit{Ibid.} at 4-31 and 4-32.
\textsuperscript{410} \textit{Ibid.} at 4-43.
\textsuperscript{411} \textit{Ibid.} at 4-34.
\textsuperscript{412} \textit{Ibid.} at 4-32.
\textsuperscript{413} \textit{Ibid.} at 4-34.
\textsuperscript{414} \textit{Ibid.} at 4-43.
\textsuperscript{415} \textit{Ibid.}
\textsuperscript{416} \textit{Ibid.}
\textsuperscript{417} \textit{Ibid.}
emergencies, unauthorized water withdrawals and other contingencies.\textsuperscript{418} Insufficient conveyance flows lead to poor water quality for domestic and municipal users and, according to the Panel, any failure to build in contingencies for unforeseeable demands is "not prudent".\textsuperscript{419} The Panel finds that the plans do not adequately address current and future consumptive demands because water quality is not ensured.\textsuperscript{420}

In short, the Panel concludes that the Diversion Plan does not deal sufficiently with current water deficits, and nor does it address future water requirements.\textsuperscript{421} In addition, the plan does not respect current water rights, does not meet the minimum Preliminary IFN requirements, and results in poor water quality due to low conveyance flows.\textsuperscript{422} Although the Expanded Diversion Plan is an improvement over the Diversion Plan (because it will meet the minimum Preliminary IFN), it does not respect existing water rights and will similarly result in poor water quality because of low conveyance flows.\textsuperscript{423} Neither plan, according to the Panel, is sustainable (\textit{i.e.}, meets basic environmental criteria, respects existing water rights and meets current and future needs).\textsuperscript{424} As a consequence, the Panel refuses to support either plan.\textsuperscript{425}

\textbf{4.8 Need for Storage in the Highwood Basin}

Because the proposed diversion plans were found not to satisfy its sustainable development threshold test, the Panel considered other options to manage water supply and use.\textsuperscript{426} The Panel observes that there was little to no public support for alternatives such as demand-side management, canceling existing water licences – even with compensation, altering agricultural practices, and capping population growth and development (including

\textsuperscript{418} Ibid. at 4-9.
\textsuperscript{419} Ibid. at 4-33, 4-43 and 4-44.
\textsuperscript{420} Ibid. at 4-44.
\textsuperscript{421} Ibid.
\textsuperscript{422} Ibid.
\textsuperscript{423} Ibid. at 8-12.
\textsuperscript{424} Ibid. at 4-44.
\textsuperscript{425} Ibid.
\textsuperscript{426} Ibid.
To meet sustainable development objectives, the Panel concludes that additional water storage in the Highwood basin will be necessary.\footnote{Ibid, at 8-12.}

The Panel considered the proposed Expanded Woman’s Coulee Reservoir project as a means of providing the requisite additional storage. The Panel finds that the expansion would only meet the minimum Preliminary IFN if some licensed water users experienced deficits and conveyance flows were reduced.\footnote{Ibid.} In other words, current demands would not be met.\footnote{Ibid, at 4-45.} During the pre-hearing conference, the Panel directed the Applicant to investigate alternatives to the proposed expansion that would meet its criteria of sustainability (i.e., meet IFN requirements, licence allocations, conveyance flows and predicted future demands).\footnote{Ibid.} Ultimately, a “Super” Expanded Woman’s Coulee Reservoir was proposed.\footnote{Ibid.}

The Panel concludes that additional storage in the Highwood River basin is required in the interests of sustainable development.\footnote{Ibid, at 4-56.} The Panel finds that the Super Expanded Woman’s Coulee Reservoir could meet current water needs, but might not meet future needs for water and protect the environment at the same time.\footnote{Ibid. at 8-14.} Taking into consideration unforeseen contingencies and an updated IFN based on science, the Panel decides that more storage capacity than would be provided by the “super” expansion may be required.\footnote{Ibid.} The Panel is of the view “a series of storage opportunities may ultimately be needed in the basin over the long term to meet future water demand”.\footnote{Ibid. at 8-15.} In the end, the Panel declines to make a final determination on this element of the Project because additional information and further public consultation is necessary.\footnote{Ibid, at 4-48 and 8-14.} It is not surprising that the Panel
sees additional information and consultation as necessary. The Panel had, in effect, modified the Project by requiring additional storage.\footnote{For further discussion, see “Alberta’s Newest River Dam”, supra note 300.}

### 4.9 Decision and Directions of the Panel

As set out above, the Panel finds that neither the Diversion nor the Expanded Diversion plan is sustainable and, as a result, it refuses to approve the plans under the NRCBA or recommend them for approval under CEAA.\footnote{Highwood Decision, supra note 8 at 4-44.} Notwithstanding that the plans are an integral element of the Project, the Panel does not reject the Project outright because of its decision not to approve the plans. Rather, the Panel chooses to evaluate the TCP and defer any further consideration of the plans until they can be revised.\footnote{Ibid, at 8-18.}

As it did with the diversion plans, the Panel considered whether the TCP met its sustainability threshold. The Panel concludes that the threshold is met.\footnote{Ibid.} According to the Panel, the Little Bow River Reservoir and Clear Lake project components do not appear to impinge on current water rights and licences because diversions are to occur at times when flows are high and there is sufficient water to satisfy all outstanding licences.\footnote{Ibid.} In addition, the diversions are to occur when there is a relative abundance of water and any adverse effects on the environment are expected to be insignificant.\footnote{Ibid.} Finally, the Panel was not presented with any evidence to suggest that current and future needs will not be met by the TCP.\footnote{Ibid.} Because the threshold is met, the Panel considered the environmental effects of the TCP in depth. (This aspect of the Panel’s decision is discussed in a subsequent section.)

The Panel reasons that it can separate the TCP from the plans – and consider the TCP independently – because it sees a distinction between: (a) satisfying irrigation expansion in the lower Little Bow River basin and near Clear Lake by diverting and storing water during the spring freshet and at other times of high flow; and (b) addressing lack of
water during low flow in the upper Little Bow River, lower Highwood River and lower Mosquito Creek basins.\textsuperscript{445} The Panel asserts that it has "carefully examined the relationship between the operation of the Highwood Diversion works and the expansion of irrigation through the proposed Little Bow River Reservoir and near Clear Lake".\textsuperscript{446} The proposed increase in the capacity of the diversion works is intended to divert and store the spring freshet.\textsuperscript{447} Accordingly, the location and size of the works was determined to take advantage of high flow events, and these factors, reasons the Panel, are not affected by operating plans intended for periods of low flow.\textsuperscript{448} During low flows, water for irrigation would be obtained from storage and the additional diversion capacity would not be used.\textsuperscript{449} Therefore, according to the Panel, an increase in the storage capacity of the Little Bow River Reservoir and Clear Lake is not relevant to the capacity and operational plans associated with diversions from the Highwood River during low flow events.\textsuperscript{450} It was the diversion rates contained in the plans that applied during low flows that were unacceptable to the Panel.

At the time of the Highwood Decision, the TCP was expected to take two or three years to construct, which was (the Panel anticipated) sufficient time to prepare a new diversion plan.\textsuperscript{451} This period of time would also allow the Applicant to complete an assessment of the environmental, social and economic effects of the Super Expanded Woman's Coulee Reservoir and update its comparative analysis of the other potential storage sites within the Highwood River Basin.\textsuperscript{452} The Panel is of the view that construction of the

\textsuperscript{445} Ibid.
\textsuperscript{446} Ibid.
\textsuperscript{447} Ibid.
\textsuperscript{448} Ibid.
\textsuperscript{449} Ibid.
\textsuperscript{450} Ibid.
\textsuperscript{451} Ibid. at 4-38.
TCP can proceed while the issues of additional storage and a diversion plan for low flow events are dealt with.\footnote{Highwood Decision, \textit{ibid.} at 8-19.}

To provide a framework for addressing these outstanding issues, the NRCB members of the Panel issued Board Order No. 9601-1.\footnote{Board Order No. 9601-1, \textit{supra} note 452.} The order required that additional information be prepared by the Applicant, including: (a) a reassessment of IFNs for the Highwood River; (b) an analysis of the feasibility of storage at the Woman's Coulee site, including a comparative analysis of this and two other storage sites; and (c) a revised diversion plan that will meet consumptive needs and IFNs at times of low flow.\footnote{Report of the NRCB/CEAA Joint Panel Review Application \#9801 – Alberta Infrastructure, February 2002: Highwood Storage and Diversion Plan Review of Progress Toward Meeting Board Order 9601-1 at 1 [hereinafter Progress Report \#4]. Note that all of the progress reports referred to herein are available online, see “NRCBA Decisions”, \textit{supra} note 452.} This information was to be presented to the Panel within 12 months (\textit{i.e.}, before June 1999).\footnote{Board Order No. 9601-1, \textit{supra} note 452.}

The Panel sets out in the Highwood Decision a number of directions concerning the preparation of the revised diversion plan and the assessment of the Super Expanded Woman's Coulee and alternative water storage sites.\footnote{See Highwood Decision, \textit{supra} note 8 at 9-1 to 9-6.} For example, the Panel directs that the diversion plan be revised to take into account additional storage and to meet the criteria of a “sound water management project”, these being:

- The [science-based] IFN is observed at all times in the Highwood.
- Existing licence commitments are upheld.
- Adequate conveyance flows are maintained in both the upper Little Bow River ... and Lower Mosquito Creek ...
- Known future demands are met.
- Consideration is given for possibly reserving water for future [unknown] requirements.\footnote{\textit{Ibid.} at 4-55 and 9-2.}
The Panel also requires that a “detailed process plan” for completing the Highwood River Basin Water Management Plan (the “HMP”) be prepared and filed with the NRCB and the Agency so that it can be considered when the outstanding storage and diversion plan matters are addressed.\textsuperscript{459} Alberta Environment had committed in 1991 to prepare the HMP and draft terms of reference for the plan were released in 1993.\textsuperscript{460} The plan was intended to improve overall water management in the Highwood River Basin, foster the sustainability of aquatic and riparian ecosystems and ensure an adequate supply of water for all uses.\textsuperscript{461} The HMP was being developed under the assumption that additional water would be diverted to the Little Bow River basin.\textsuperscript{462} Alberta Environment had been waiting for a decision on the Project before moving forward with the HMP because the plan would be impacted by the Panel’s decision to approve or not approve the Project.\textsuperscript{463}

The Panel directed that the process plan for preparing the HMP observe its three criteria of sustainable water management.\textsuperscript{464} The Panel also required the process plan address certain issues, including all point and non-point source pollution in the basin, anticipated future development in the basin and various fisheries management issues.\textsuperscript{465} Board Order No. 9601-1 provides that the detailed process plan for the HMP must include specific timelines for completing the HMP planning process within two years (\textit{i.e.}, before June 2000).

\section*{4.10 Environmental Effects of the Three-Component Project}

\subsection*{4.10.1 Assessment Framework}

Taking into account the requirements of CEAA, the Panel articulates the scope of the EIA for the Project as follows:

\begin{itemize}
\item \textsuperscript{459} \textit{ibid.} at 9-3.
\item \textsuperscript{460} \textit{ibid.} at 4-53.
\item \textsuperscript{461} \textit{ibid.}
\item \textsuperscript{462} \textit{ibid.} at 4-53 and 4-54.
\item \textsuperscript{463} \textit{ibid.} at 4-53.
\item \textsuperscript{464} \textit{ibid.} at 4-56.
\item \textsuperscript{465} \textit{ibid.}
\end{itemize}
The environmental effects of the Project that the Panel will consider include, but are not limited to effects upon, the following: flora and fauna; water quality and quantity; groundwater; fish and fish habitats; migratory birds and migratory bird habitats, and vulnerable, threatened or endangered species; and will include the effects of a change in the environment upon: impact on navigation both upstream and downstream of the Project; aboriginal and non-aboriginal land use and related interests.466

In considering these potential impacts, the Panel focuses its attention on whether any of the effects will be likely to occur (in a cumulative fashion) within the “regional ecosystem”.467 The Panel defines this ecosystem as the Little Bow River, lower Mosquito Creek and lower Highwood River basins.468 The Panel also considers the potential for the Project to affect areas outside of these basins. For example, the Panel considers whether the TCP might have an impact on the Oldman River and the operation of the Oldman River Dam.469 In addition, the Panel is cognizant of indirect or secondary impacts, as well as those impacts occurring at or adjacent to the Project site. According to the Panel, it should:

... have some regard for the inevitable secondary impacts arising, for example, from the provision of water from the proposed three-component project. The effects of changing the flow regime in the upper Little Bow River might be an example of a direct effect having potential consequences in the upper Little Bow River basin. Increased availability of a stable water supply, previously difficult to obtain, might be an example of an indirect effect having potential consequences in the basin [emphasis original].470

In conducting its assessment, the Panel emphasizes that ecosystems are dynamic.471 The Panel asserts that it assesses the environmental impacts of the TCP taking into consideration historic, current and predicted future environmental conditions in the lower Highwood River, the upper Little Bow River and Mosquito Creek basins.472 The Panel

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467 Highwood Decision, ibid. at 8-21.
468 Ibid.
469 Ibid. at 8-23.
470 Ibid. at 8-21.
471 Ibid. at 8-20.
472 Ibid.
recognizes that these basins have experienced natural stresses, have been exploited by humans in the past, and are under considerable pressure given current demands for water.\textsuperscript{473}

The Panel notes that in the NRCB's past decisions the Board has recognized that it is difficult, and often impossible, to predict how an ecosystem and its various components will respond to a project's impacts.\textsuperscript{474} The Panel also recognizes that even where the response could (theoretically) be predicted, there is often a lack of information and other types of difficulties that make it impossible to determine the likely effects an impact will have.\textsuperscript{475} The Panel is aware that EIAs are inherently uncertain and it deals with the challenge of this uncertainty by:

... concentrating on the potential response of ecosystem components about which more is known, by examining evidence before it about the historical record of the ecosystem under consideration and similar ecosystems elsewhere, and by making conservative assumptions in the face of uncertainty. By these means, the Panel has arrived at qualitative assessments of the risk that ecosystems will undergo changes of state and has examined the potential of management measures to control or avoid unwanted changes.\textsuperscript{476}

With respect to such changes, the Panel states that it is most concerned "about the risk of large, potentially undesirable changes that may be difficult or impossible to reverse".\textsuperscript{477}

The Panel ultimately finds that the TCP would likely result in both positive and negative environmental impacts.\textsuperscript{478} A number of these impacts are discussed below. It should be noted that because a decision on the diversion plan was postponed until the plan could be revised, the Panel had to make a number of assumptions about the operation of the final plan for the purposes of considering the effects of the TCP.\textsuperscript{479} The Panel characterizes its assumptions as "cautious".\textsuperscript{480} The Panel expects that the future review of the revised

\textsuperscript{473} Ibid. at 8-20 and 8-21.
\textsuperscript{474} Ibid. at 8-21.
\textsuperscript{475} Ibid.
\textsuperscript{476} Ibid.
\textsuperscript{477} Ibid.
\textsuperscript{478} Ibid. at 8-20.
\textsuperscript{479} See Ibid. at 5-2, 5-3, 5-45 and 5-46.
\textsuperscript{480} Ibid. at 5-3.
diversion plan will not reveal effects any greater than those assumed by the Panel for the purposes of its assessment. 481

4.10.2 Examples of Specific Environmental Effects

4.10.2.1 Water Quality

Although the Panel considered water quantity in the Woman’s Coulee Reservoir, Mosquito Creek, Clear Lake and Highwood River, only its consideration of water quality will be discussed. This aspect of the Panel’s decision is sufficiently instructive and representative of the Panel’s reasoning for the purposes of this thesis. It should also be noted that not all aspects relating to water quality are summarized below, only water quality as it relates to the Little Bow River and proposed Little Bow Reservoir is discussed. Again, it is necessary to highlight only certain elements of the Panel’s discussion in order to explore the Panel’s reasoning and its application of CEAA.

The Applicant evaluated water quality impacts by comparing predicted post-Project water quality (determined through modeling) with the Bow River Water Quality Task Force’s 1991 water quality objectives and federal and provincial guidelines. 482 These standards apply for a variety of water uses (e.g., domestic, agriculture, industrial and ecosystem conservation). 483 If the post-Project quality of the water was predicted to fall below the acceptability thresholds set out in the objectives and guidelines, the effect of the Project was characterized as “major”. 484 The Panel finds that the models used by the Applicant to predict impacts were “likely the most appropriate available predictors”. 485 The Panel adds that “[n]otwithstanding some variation in results among different experts (which reflected different assumptions regarding input variables), the predictions varied in degree, but delivered consistent trends”. 486

481 Ibid.
482 Ibid. at 5-3 and 5-6.
483 Ibid. at 5-3.
484 Ibid.
485 Ibid. at 5-8.
486 Ibid.
In order to assess the potential effects of the TCP on water quality, the Panel had to first identify the baseline water quality conditions. The Panel observes that there is "progressive degradation of Highwood water as it travels down Mosquito Creek and the Little Bow River". The Panel expresses serious concern over the deterioration of water quality in the upper Little Bow River. The sources of pollution identified as impacting water quality include increased livestock production and the release of treated sewage by municipalities. According to the Panel, a particular problem, and cause of pollution, is the Frank Lake wetlands project.

Frank Lake is used as a tertiary treatment system to "polish" effluent from a number of sources. Effluent loading has, however, increased to the point where the lake cannot assimilate the pollution and overflow discharges from the lake (which are natural occurrences) are causing contamination downstream. The most prevalent pollutant is excess phosphorus, which has the effect of accelerating the growth of aquatic plants and algae. Discharges from the lake into the Little Bow River have been observed during high run-off years. The operation of the Little Bow River Reservoir will mean that pollution collecting in Frank Lake will be periodically discharged into the Little Bow River and will eventually accumulate in the reservoir. According to the Panel, immediate remedial action is necessary to address effluent loading in Frank Lake. In the Panel’s view, the situation is "environmentally unsustainable, similar to the current unsustainable situation with over-allocation of water".

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487 Ibid.
488 Ibid. at 8-23.
489 Ibid.
490 Ibid. at 8-23 and 8-24.
491 Ibid.
492 Ibid. at 8-24 and 5-10.
493 Ibid. at 5-10.
494 Ibid.
495 Ibid. at 5-15 and 5-16.
496 Ibid. at 8-24.
497 Ibid. at 5-11.
The Panel finds that the benefits associated with the construction of the Little Bow River Reservoir will be limited if water pollution is not addressed.\textsuperscript{498} The accumulation of pollution in the reservoir could, according to the Panel, result in a significant adverse environmental effect occurring.\textsuperscript{499} For example, modeling indicates a “clear and consistent” trend toward eutrophication (\textit{i.e.}, the water will become enriched with nutrients resulting in an increase in biological activity).\textsuperscript{500} If the reservoir were to become hypereutropic (\textit{i.e.}, the water were to become very rich in mineral nutrients and plant growth), the cost of treating the water for domestic and municipal purposes would increase; the plugging of irrigation equipment with weeds and algae would occur more often; and there would be a rise in the frequency of fish kills due to anoxia.\textsuperscript{501} In addition, the water released from the reservoir would have a negative impact on fish located downstream.\textsuperscript{502}

The TCP cannot be modified to address or mitigate the accumulation of pollution in the reservoir.\textsuperscript{503} The Panel believes pollution should, therefore, be dealt with through the implementation of regional mitigation and protection plans.\textsuperscript{504} It supports the polluter-pays principle stating that the costs of dealing with water pollution should be borne by those who are responsible for the pollution (\textit{e.g.}, municipalities, local farmers, and industry).\textsuperscript{505} The Panel notes that continuous water monitoring will be necessary to ensure that good water quality, once achieved, is maintained.\textsuperscript{506} In order to protect water quality in the reservoir, the Panel recommends basin-wide public participation to identify and plan for the management of water pollution in the region.\textsuperscript{507} The Panel suggests that Alberta Environment lead a water quality initiative and commence a water quality protection plan.\textsuperscript{508} Alberta Environment expressed confidence that remediation of the background (or baseline)
condition was possible.\textsuperscript{509} Under its NRCBA jurisdiction, the Panel imposes an obligation on the operator of the Project (\textit{i.e.}, the Province of Alberta) to ensure that water quality monitoring is undertaken to confirm (to the satisfaction of Alberta Environment) that water released from the Little Bow Reservoir meets water quality and fisheries objectives.\textsuperscript{510}

The Panel concludes that the TCP will not adversely affect water quality in the Little Bow River in a significant way.\textsuperscript{511} Although the discharge of polluted water from Frank Lake could lower the quality of water in the upper Little Bow River and the proposed reservoir, the members of the Panel accept Alberta Environment’s commitment (made during the hearings) to deal with the problems associated with the Frank Lake wetlands project.\textsuperscript{512}

### 4.10.2.2 Aquatic Habitat and Fisheries

The Panel recognizes that fish habitat and fish populations in the Highwood River, the upper Little Bow River and Mosquito Creek have been negatively impacted by past activities.\textsuperscript{513} With respect to the Highwood River, the Panel states that the objective should be to achieve (post-Project) water quality conditions that are “no worse” than the conditions that would have occurred naturally.\textsuperscript{514}

At the time of the Highwood Decision, there was little available information about fish populations in the Highwood River.\textsuperscript{515} Consequently, the Applicant was unable to assess the potential for the TCP to impact these populations and, as a result, its EIA was modeled on the potential for the Project to impact fish habitat.\textsuperscript{516} The Applicant recognizes, however, that “the relationship between habitat and the productivity of the fishery is uncertain”.\textsuperscript{517} The Applicant and the Panel were both aware that factors besides habitat

\textsuperscript{509} Ibid. at 5-16.
\textsuperscript{510} Approval No. 8, \textit{supra} note 347 at B-4.
\textsuperscript{511} Highwood Decision, \textit{supra} note 8 at 8-26.
\textsuperscript{512} Ibid.
\textsuperscript{513} Ibid.
\textsuperscript{514} Ibid. at 5-36.
\textsuperscript{515} Ibid. at 5-31.
\textsuperscript{516} Ibid.
\textsuperscript{517} Ibid.
quality, such as angling pressure, affect fish populations and that the EIA would not necessarily predict with accuracy the Project’s potential to impact fish populations.\textsuperscript{518} The Panel notes with interest that this problem was “forgotten” by the Applicant in its economic assessment, “where a direct relationship between habitat gains, population size and economic benefits was assumed”.\textsuperscript{519}

In assessing the Project’s effects on Highwood River fish habitat, the Panel states that because a “fully quantitative analysis ... would have been unworkable for purposes of impact assessment ... a less rigorous, qualitative approach was used which combined quantitative prediction with profession judgement”.\textsuperscript{520} The Panel also notes that there were areas of uncertainty. For example, during the hearing there was disagreement about whether water temperature would be affected by curtailing diversions from the Highwood River.\textsuperscript{521} The Applicant conceded that the evidence was equivocal and proposed that computer modeling be set aside and controlled experiments undertaken.\textsuperscript{522} The Panel supported this approach, recommending that the operator “develop an estimate of the error associated with its temperature predictions and adopt a lower temperature management response threshold”.\textsuperscript{523} The Panel comments that the operator of the Project should be able to show that curtailing diversions would lower water temperatures and be effective in preventing harm to fish.\textsuperscript{524}

The Panel requires (under the NRCBA) that the diversion works on the Highwood River incorporate fish screens and that the Applicant prepare and implement a fisheries mitigation and enhancement plan for the TCP.\textsuperscript{525} The plan, according to the Panel, should reflect input from the public and the appropriate government agencies and should be

\textsuperscript{518} Ibid. at 5-31 and 5-41.
\textsuperscript{519} Ibid. at 5-31.
\textsuperscript{520} Ibid. at 5-32.
\textsuperscript{521} Ibid. at 5-35.
\textsuperscript{522} Ibid.
\textsuperscript{523} Ibid. at 5-36.
\textsuperscript{524} Ibid.
\textsuperscript{525} Ibid. at 8-27.
reviewed by Alberta Environment, in consultation with DFO.\textsuperscript{526} The Panel provides a list of factors that emerged from the hearing that it required be addressed by the plan.\textsuperscript{527} The list includes consideration of the feasibility and desirability of managing or establishing certain fisheries, habitat compensation and the ongoing monitoring of the effectiveness of mitigation and enhancement efforts.\textsuperscript{528} The plan, states the Panel, is to be developed as early as possible by the proponent so that it can be taken into consideration in the final design and operation of the TCP.\textsuperscript{529} The Panel also requires that the proponent undertake additional modeling and water quality monitoring to be certain that water released from the Little Bow River Reservoir meets water quality and fisheries management objectives.\textsuperscript{530}

When considering whether fish could be sustained in the Little Bow River Reservoir, the Panel was not willing to rely too heavily on the proponent's predictions regarding phosphorous loading.\textsuperscript{531} The Applicant assumed that the accumulation of pollution in Frank Lake would be sufficiently mitigated.\textsuperscript{532} The Panel comments, however, that the "success of measures to control point source pollution, particularly from Frank Lake and non-source pollution from agriculture in the basins is not a forgone conclusion."\textsuperscript{533} The Panel notes, "simply providing more water for irrigation, domestic consumption, fisheries, wildlife, recreation and other uses, without everyone doing their utmost to protect the quality of the water and the riverine environment, would be a losing proposition".\textsuperscript{534} According to the Panel, voluntary action on the part of the public is needed, as well as government action.\textsuperscript{535}

DFO's \textit{Policy for the Management of Fish Habitat} requires the proponent of a project that may have harmful effects on fish habitat to take steps to avoid these effects or, if

\textsuperscript{526} Ibid.
\textsuperscript{527} Ibid.
\textsuperscript{528} Ibid.
\textsuperscript{529} Ibid.
\textsuperscript{530} Ibid. at 8-28.
\textsuperscript{531} Ibid. at 5-39.
\textsuperscript{532} Ibid.
\textsuperscript{533} Ibid. at 5-41.
\textsuperscript{534} Ibid. at 6-40.
\textsuperscript{535} Ibid.
harm is unavoidable, undertake some form of compensation so that there is no net loss of fish habitat.\textsuperscript{536} The Applicant argued that the TCP would result in a net increase in fish habitat.\textsuperscript{537} The Panel concludes, however, that there is too much uncertainty with respect to the proponent’s prediction and suggests that fisheries regulators carefully assess this claim of habitat gain when reviewing the fisheries mitigation and enhancement plan.\textsuperscript{538}

Taking into account all of the mitigation efforts, the Panel finds that there will be no net loss of fisheries productive capacity.\textsuperscript{539} Moreover, the Panel concludes that installing fish screens on the Highwood River, re-establishing the Clear Lake fishery and establishing a fishery in the Little Bow River Reservoir will have an overall beneficial effect on the fisheries located in Highwood, upper Little Bow and Mosquito Creek basins.\textsuperscript{540}

In its recommendations to the federal government for the purposes of CEAA, the Panel cites the requirements of the NRCB approval regarding the integration of fisheries considerations in the design and operation of the TCP.\textsuperscript{541} The Panel is of the view that the fisheries mitigation and enhancement plan, which is a condition of the NRCB’s approval, will give DFO sufficient information to determine whether its “no-net-loss of habitat” policy will be met through the required mitigation measures.\textsuperscript{542} The NRCB approval also stipulates that the fisheries habitat compensation plan required by DFO be completed as an element of the mitigation and enhancement plan.\textsuperscript{543} The Panel recommends DFO and local residents assist the Applicant with the development and evaluation of the fisheries mitigation and enhancement plan.\textsuperscript{544}

\begin{footnotesize}
\begin{enumerate}
\item Ibid. at 8-28.
\item Ibid.
\item Ibid.
\item Ibid.
\item Ibid.
\item Ibid. at 9-7.
\item Ibid. See also Approval No. 8, supra note 347 at B-7.
\item Highwood Decision, ibid. at 9-7.
\item Ibid. See also Approval No. 8, supra note 347 at B-7.
\end{enumerate}
\end{footnotesize}
4.10.2.3 Prairie Environment Vegetation and Wildlife

There are a number of potentially serious environmental impacts associated with the TCP. When the Little Bow Reservoir is flooded, a large contiguous patch of mixed grass prairie measuring approximately 885 hectares (2,187 acres) will be destroyed.\footnote{Highwood Decision, supra note 8 at 8-29.} The flooding of the reservoir will also destroy approximately 33 km (20 miles) of waterfowl staging and nesting habitat, mule deer fawning habitat, hawk and songbird habitat and small mammal habitat.\footnote{Ibid.} The Panel observes that some mitigation of the damage is possible if sites near the reservoir are managed in a way that native plants and animals are restored.\footnote{Ibid.}

According to the Panel, the Clear Lake project component will also have negative impacts because it will result in the elimination of 75 ha (185 acres) of mixed grassland (due to the construction of a canal) and the conversion of 106 ha (262 acres) of mixed grassland to wetlands (as a result of flooding).\footnote{Ibid.} Although these impacts will affect numerous species that are dependent on the grassland environment, the Panel concludes that the Clear Lake project component could, nonetheless, compensate for the loss of waterfowl habitat caused by the Project on the Little Bow River.\footnote{Ibid.} The Panel recognizes that care must be taken when considering habitat trade-offs.\footnote{Ibid.} It is not clear from the decision how the Panel is to determine which trade-offs are acceptable.

The Panel emphasizes that a number of the species that will be adversely affected by the Clear Lake project component (e.g., burrowing owls and ferruginous hawks) are considered endangered or vulnerable, and have been listed by the Committee on the Status of Endangered Wildlife in Canada ("COSEWIC").\footnote{Ibid., at 8-30.} The Panel notes:

The burrowing owl population of Alberta, which is roughly half of the Canadian population, is believed to be between 432 and 864 pairs and declining. Any loss of breeding pairs at these low numbers would be considered a major impact for this.
endangered species. The ferruginous hawk cannot tolerate human disturbance. It is listed as vulnerable in Canada, having lost 40 per cent of its Alberta range and 50 per cent of its population.\textsuperscript{552}

In light of this evidence, the Panel finds that unless the potential effects of the Project on endangered or vulnerable species can be mitigated, these impacts will constitute significant adverse environmental effects.\textsuperscript{553} The Panel believes that the measures proposed by the Applicant to partially mitigate effects on burrowing owls and ferruginous hawks are “responsible precautions”.\textsuperscript{554} These mitigation measures would include restricting construction near nests and relocating nests when necessary.\textsuperscript{555} Interestingly, the Panel reaches its determination about the reasonableness of the mitigation measures while observing that the most recent bird surveys of the project area are out of date and suggesting that new surveys be undertaken.\textsuperscript{556}

Viewing the Project’s potential impacts on vegetation and wildlife as a whole, the Panel characterizes the loss of contiguous blocks of mixed grassland as a “major adverse effect because so little of this native ecoregion remains”.\textsuperscript{557} Most native grassland areas in the vicinity of the Project have, according to the Panel, been destroyed by agriculture and other developments.\textsuperscript{558} The loss of riparian habitat is also to be given “great weight”, in the Panel’s opinion, because “the biological significance of riparian zones is known to be is disproportionate to their area”.\textsuperscript{559}

In order to mitigate the potential environmental effects of the Project down to acceptable levels, the Applicant prepared a habitat compensation plan. The plan is intended to mitigate the Project’s effects on native grasslands by preserving as much grassland as possible in areas adjacent to the proposed Little Bow Reservoir.\textsuperscript{560} The plan also includes

\textsuperscript{552} Ibid. at 5-49.
\textsuperscript{553} Ibid.
\textsuperscript{554} Ibid.
\textsuperscript{555} Ibid.
\textsuperscript{556} See Ibid.
\textsuperscript{557} Ibid. at 8-29.
\textsuperscript{558} Ibid. at 5-42.
\textsuperscript{559} Ibid. at 8-29.
\textsuperscript{560} Ibid.
steps that would be taken to enhance existing habitat near Clear Lake.\textsuperscript{561} According to the Applicant, the implementation of its habitat compensation plan would result in a net gain in the value of habitat, notwithstanding a net loss of habitat area.\textsuperscript{562} The Applicant argued that, potentially, there would be no net loss of habitat, “expressed as a product of habitat value and area”.\textsuperscript{563} The Panel did not agree.

The Panel finds that the proposed habitat compensation plan would result in only partial compensation for the loss of grassland and riparian habitat.\textsuperscript{564} The Panel characterizes the impacts, even with mitigation, as a permanent loss in the value of the areas affected.\textsuperscript{565} The Panel describes the loss of habitat as “major” and as “long-term adverse impacts” that could not be fully mitigated.\textsuperscript{566} According to the Panel, it has to “weigh this adverse impact against the Project’s benefits in assessing the public interest with respect to the entire [project]”.\textsuperscript{567}

Due to the scale, the Panel concludes that it would not be feasible to attempt to mitigate fully the loss of habitat by replacing what is to be lost with new habitat reclaimed from cultivated land.\textsuperscript{568} As a result, the Panel supports a partial mitigation through the preservation, enhancement and possible addition of habitat near Clear Lake and in other areas.\textsuperscript{569} The Panel requires (pursuant to its NRCBA jurisdiction) that the proponent seek approval from Alberta Environment for its habitat compensation program and that the program, once approved, be implemented.\textsuperscript{570} The Panel also identifies a number of mitigation goals that should be incorporated into the plan (e.g., no net loss of mixed

\textsuperscript{561} Ibid.
\textsuperscript{562} Ibid.
\textsuperscript{563} Ibid.
\textsuperscript{564} Ibid.
\textsuperscript{565} Ibid.
\textsuperscript{566} Ibid.
\textsuperscript{567} Ibid.
\textsuperscript{568} Ibid. at 8-29 and 8-30.
\textsuperscript{569} Ibid. at 8-30.
\textsuperscript{570} Ibid. Note that there is an emphasis by the Panel on creating mitigation plans with oversight and/or approval from (or at least cooperation with) various government agencies. The Panel also promotes public participation in the preparation of these plans and the seeking of input from relevant non-governmental organizations such as Ducks Unlimited, see Ibid. at 8-30 and 8-31.
The Panel chooses, however, not to prescribe the methods to be undertaken by the proponent to achieve these goals. The Panel is of the view that those who are responsible for finding means of achieving mitigation should be permitted flexibility. Presumably, the Panel adopts this approach because the proponent is the one most familiar with the project under review and is best able to alter the project or its operation to effectively carry out mitigation.

Ultimately, the Panel concludes that “the residual environmental impacts of the [TCP] could be substantially mitigated by a successful compensation plan”. The Panel recognizes, however, that this assumption “will only be warranted if an adequate plan is successfully implemented”. The Panel notes that there were difficulties with a similar plan implemented at Pine Coulee. (The Pine Coulee Project involved the construction of a small dam on Willow Creek, south of Calgary.) The Panel is concerned about whether the Applicant’s plan is “realistic”. Because of the challenges encountered with the Pine Coulee habitat compensation plan, the Panel suggests that the proponent consider additional methods of compensation not set out in its application – such as the use of conservation easements.

Because the Panel considers the habitat compensation plan to be integral to the successful mitigation of the effects of the TCP, it requires (under the NRCBA) that the proponent undertake monitoring as well as the re-evaluation of its predictions and management practices if such monitoring reveals unexpected results. The acceptance of

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571 Ibid. at 8-30.
572 Ibid.
573 Ibid.
574 Ibid.
575 Ibid.
576 See “Alberta’s Newest River Dam”, supra note 300.
577 Highwood Decision, ibid. at 5-47.
578 Ibid. at 8-30.
579 Ibid.
the habitat compensation plan is conditional and the proponent is required to show tangible results.580

In its recommendations to the federal government for the purposes of CEAA, the Panel finds that the loss of mixed grass habitat will adversely affect certain bird species.581 In addition, although the Clear Lake element of the project may compensate for the loss of waterfowl habitat on the Little Bow River, it will result in the loss of mixed grass prairie and shorebird habitat.582 Species that will be affected include rare and endangered species.583 Notwithstanding, the Panel finds that the TCP will not, in respect of threatened, rare and endangered species, result in any significant adverse environmental effects.584 The Panel is of the view that mitigation, through a habitat compensation plan, will be satisfactory.585 The Panel recommends, however, that Environment Canada participate in the mitigation efforts by providing its expertise and advice.586 The Panel is of the opinion that some of the lost grasslands cannot be replaced.587 Additional lands may need to be set aside, according to the Panel, to ensure that there is adequate replacement of lost habitat.588

4.10.3 Cumulative Environmental Effects

As required under CEAA, the Panel evaluates the Project’s potential to give rise to cumulative environmental effects.589 The Panel approaches this assessment by taking into consideration the: (a) baseline ecosystem conditions (which include the impacts of prior developments and activities), (b) expected impacts of the Project on the baseline ecosystem conditions, and (c) current and future use of “the riverine ecological resources”.590 The geographic scope for considering the cumulative effects of the Project is the South

580 Ibid. at 5-50.
581 Ibid. at 9-8.
582 Ibid.
583 Ibid.
584 Ibid.
585 Ibid.
586 Ibid. See also Federal Response Backgrounder, supra note 544, Recommendation 5.
587 Highwood Decision, ibid. at 9-8.
588 Ibid.
589 See ibid. at 8-4.
590 Ibid. at 8-4 and 8-32.
Saskatchewan River Basin, focusing in particular on the management of the Highwood River, Little Bow River and lower Mosquito Creek basins.\textsuperscript{591}

The Panel describes the (pre-Project) environmental baseline conditions of the Project area as follows:

- unsustainable resource use for over 100 years;
- loss of native grasslands;
- loss of habitat for prairie animal species;
- poor water quality due to pollution from point and non-point sources;
- reduced fish habitat during low flow conditions due to water diversions;
- land use practices during the 1980s contributed to the disappearance of Clear Lake;
- an over-allocation of water resources; and
- the alteration of archaeological sites by development and other landscape changes.\textsuperscript{592}

The Panel is of the view that the baseline environmental conditions are a result of a generally unsustainable approach to resource management.\textsuperscript{593} According to the Panel, “water supply and consumptive demands must be brought into balance”.\textsuperscript{594} Similarly, the Panel states that water withdrawals and pollution must be “understood and managed within acceptable limits that reflect the natural capacities of the environment”.\textsuperscript{595} In short, the Panel believes that given the unsatisfactory nature of the environmental baseline, any new

\textsuperscript{591} Ibid. at 8-4.
\textsuperscript{592} Ibid. at 8-32.
\textsuperscript{593} Ibid.
\textsuperscript{594} Ibid.
\textsuperscript{595} Ibid.
water management project in the basins should move the relationship between humans and the environment towards sustainability.

Having identified the baseline environmental conditions, the Panel considered whether any of the Project’s expected impacts would act cumulatively with these conditions and result in significant adverse environmental effects. For example, the Panel finds that the Project would result in the loss of mixed grassland and that this loss would contribute to the overall decline of mixed grassland in the region – a major adverse effect. The Panel concludes however that with mitigation the residual adverse effects could be reduced to insignificant. In respect of some impacts, the Panel finds that the Project (with mitigation) will improve the baseline conditions, notwithstanding that some of the mitigation measures relied upon cannot be enforced by the Panel. Where it has sufficient jurisdiction, the Panel imposes obligations on responsible authorities to mitigate the Project’s effects. Where the Panel does not have jurisdiction, it makes recommendations that would (if carried out) reduce possible cumulative effects. For example, the Panel promotes the development of a basin-wide pollution prevention program to address the cumulative effects of phosphorous loading in the Little Bow River. The Panel ultimately concludes that “the cumulative impact of this Project and all other existing water uses in the basin would not cause additional significant adverse impacts on the aquatic environment of the Little Bow and Highwood river basins”.

In reaching its conclusions the Panel applies a framework of “sustainability of ecosystems over time”. The Panel finds that although the TCP is not expected to rectify all water supply issues in the Little Bow basin, it could improve supply. Similarly, the
Panel finds that the TCP will not resolve all of the adverse cumulative effects on the environment caused by previous development activities and water management approaches, but it will "set the stage" for addressing at least some of these problems and will generally improve conditions. Interestingly, the Panel refuses to accept a limit on future development. It states:

... increasing demands for water in the Highwood and Little Bow River basins is inevitable, especially in terms of municipal growth ... however, the Panel has concluded that the establishment of an IFN for the Highwood River and an approved operating plan for the project is the best way of ensuring that environmental water requirements are better met in the future.

The Panel seems to take some comfort in the fact that the amount of additional water that the Project will make available for irrigation is consistent with the limits on irrigation expansion in the Bow River Basin imposed by the South Saskatchewan Basin Water Allocation Regulation.

4.10.4 Aboriginal Interests and Concerns

The Panel concludes that the Project will not have a negative impact on the economic well being of the Peigan or Blood First Nations. Rather, the Project will likely address potential water shortage issues to the benefit of all, including First Nations. However, the creation of the Little Bow Reservoir will, according to the Panel, result in "significant residual adverse environmental effects leading to social and cultural losses for aboriginal people, particularly the Blackfoot First Nations". Moreover, these losses, the

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605 Ibid. at 8-33.
606 Ibid. at 8-34.
608 Note that under its NRCBA jurisdiction, the Panel addresses various social effects that are expected to result from the TCP. These effects include impacts on transportation, water supply and use, municipal water disposal, navigation, land use planning, as well Aboriginal interests. For example, the creation of the Little Bow Reservoir requires the relocation of the Little Bow Hutterian Brethren. This colony has a significant agricultural operation and is comprised of 101 residents. The Panel characterizes this relocation as perhaps the reservoir's "major single adverse social impact": Highwood Decision, ibid. at 6-5.
609 Ibid. at 8-46.
610 Ibid.
611 Ibid. at 8-47.
Panel recognizes, cannot be fully mitigated and the effects are cumulative in that they add to other losses of archaeological resources.\textsuperscript{612}

First Nations argued during the public hearing that some areas should not be subject to development because, if developed, these places can no longer be used for their cultural and spiritual purposes.\textsuperscript{613} The Panel recognizes the potential loss of cultural resources and geography, but seems to accept that additional water management projects are necessary, given the broader public interest.\textsuperscript{614} The Panel reasons that "the losses for First Nations people must be acknowledged, resources identified to mitigate and reduce as much of the loss as possible, sites preserved wherever possible, and impacts kept to a minimum".\textsuperscript{615} Accordingly, the Panel imposes conditions to mitigate the impacts.\textsuperscript{616} For example, a two-hearth teepee ring that would otherwise become submerged is to be relocated before the Little Bow Reservoir is filled.\textsuperscript{617} In addition, and in order to address some of the impacts of the Project, the Panel requires additional research into the cultural losses that will occur should the TCP proceed.\textsuperscript{618} It is of the view that an interpretive area and education programs are necessary to record the importance to First Nations of the Little Bow region and to record the culture losses that have occurred as a result of development over the past century.\textsuperscript{619}

Although the Project will, in the Panel's view, involve the loss of special sites, a sense of place and artifacts, it recommends that the Project proceed.\textsuperscript{620} The Panel concludes, although the Project will have adverse environmental effects leading to social and cultural losses, it would "not have significant adverse effects on the environmental interests and concerns of the aboriginal people, including the effects on water".\textsuperscript{621} The Panel notes that the Peigan are engaged in litigation with the Province and are claiming prior water rights

\textsuperscript{612} Ibid.
\textsuperscript{613} Ibid.
\textsuperscript{614} See Ibid.
\textsuperscript{615} Ibid. at 8-47.
\textsuperscript{616} Ibid. at 9-9.
\textsuperscript{617} Ibid. at 8-50.
\textsuperscript{618} Ibid. at 8-47.
\textsuperscript{619} Ibid.
\textsuperscript{620} Ibid. at 9-9.
\textsuperscript{621} Ibid. at 8-47 and 9-9.
and allocations for irrigation purposes. The Panel observes that, “it is clear that the Peigan value the economic importance and benefits that irrigation development brings.” The Panel also recognizes that a massive irrigation project on the Peigan Reserve would have significant environmental impacts similar to those of the Project, but likely greater.

4.11 Recommendations of Panel and Federal Response

At the conclusion of its review, the Panel makes six main recommendations to the federal government in respect of the TCP, a number of which were mentioned in more detail above. With the approval of the Governor-in-Council, the responsible authority (i.e., DFO) – in consultation with Environment Canada, the Department of Health, the Canadian Environmental Assessment Agency, and the Department of Indian Affairs and Northern Development – prepared a written response to the Panel’s recommendations. The federal government accepted or acknowledged all of the Panel’s recommendations, with only a few minor clarifications. The government agreed that it was now in a position to consider (with suitable mitigation and/or compensation) granting approvals for the TCP under the Fisheries Act and Navigable Waters Protection Act. In accepting the Panel’s recommendations, the federal government agreed that DFO and Environment Canada would provide the Applicant with advice and assistance in order to facilitate the implementation of the necessary mitigation and habitat compensation measures. The federal government also supported the development of an interpretive program to identify and acknowledge those cultural losses that would be suffered by First Nations impacted by the Project.

4.12 Second Joint Panel Convened

On March 22, 2000 a second joint panel (the “Second Panel”) was established under the NRCBA and CEAA to assess both the option of storage at Woman’s

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622 Ibid. at 8-51.
623 Ibid.
624 Ibid.
625 The information contained in this paragraph is taken from: Federal Backgrounder, supra note 544.
Coulee and a revised diversion plan for the Project. The Second Panel also assumed responsibility for monitoring the progress of the Applicant in providing the outstanding information required by Board Order No. 9601-1. It has been reported that a new panel was convened because the original members of the Panel were unavailable. The Second Panel, encountering a number of delays and difficulties, issued progress reports to keep the review process moving forward and to inform the public of developments. These reports are summarized below.

4.12.1 Progress Report #1 (June 2000)

The Applicant requested an extension of the June 1999 deadline to meet the conditions of Board Order 9601-1 in May 1999 and March 2000. A public meeting was held on April 19, 2000 to consider a possible extension. Following this meeting, the Second Panel’s first progress report was issued. In its report the Panel recognized confusion over the relationship between the HMP and the storage review process. Some participants were of the view that the HMP should be completed before storage options were considered because there may be means besides off-stream storage (at Woman’s Coulee or elsewhere) to deal with water management issues. For example, it was suggested that demand-side management, the recycling and re-treating of water, and water conservation might avoid the need for additional facilities. There was a certain amount of dissatisfaction expressed over the interventionist role assumed by the original Panel and that

627 Progress Report #4, supra note 455 at 1.
629 “Highwood Storage Backgrounder”, supra note 626.
630 Progress Report #4, supra note 455 at 1.
632 Ibid. at 1, 3 and 11.
633 Ibid. at 11.
634 Ibid.
panel's requirement that the Applicant incorporate additional storage into its project proposal.

The Second Panel reconsidered the process established by the original Panel and concludes that the Applicant should prepare a revised diversion plan and apply for its approval, but this plan need not depend on additional storage. Storage would be considered during the development of Phase 1 of the HMP. In other words, the need for additional storage capacity would be evaluated during the development of the water management plan for the Highwood River Basin – it would not be assumed.

In order to facilitate public participation in the preparation of Phase 1 of the HMP, it was decided that an independent public advisory committee (the "PAC") would be established and an independent facilitator appointed. Because Alberta Environment was responsible for the HMP, it became responsible for organizing the PAC and selecting its members. The committee eventually came to include municipal representatives, industry representatives, local landowners and representatives of various interest groups.

It was also decided that Phase 1 of the HMP would include an investigation of the full range of options for addressing current and future water supply and demand issues, such as storage and non-storage means of meeting the IFNs for the Highwood River during low flows. Phase 2 would address all other basin planning matters. The Applicant was responsible for providing Alberta Environment with technical reviews and information on storage options for the purposes of preparing the HMP.

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639 See "Alberta’s Newest River Dam", *supra* note 300.
The Second Panel granted the Applicant an extension until March 2002 to meet the outstanding conditions of Board Order 9601-1.\textsuperscript{643}

\textbf{4.12.2 Progress Report #2 (December 2000)}

The Second Panel held a public meeting on November 22, 2000 and in December of that year issued its second progress report.\textsuperscript{644} In this report, the panel addresses matters relating the establishment of the PAC and the development of the HMP, although it recognizes that it has no direct jurisdiction over these issues.\textsuperscript{645} The Second Panel chooses to make recommendations concerning the PAC and the HMP because the progress of Phase 1 would impact the timing of the Applicant’s request for approval of the revised diversion plan (with or without storage) and its ability to meet the March 2002 deadline.\textsuperscript{646}

During the November meeting, Alberta Environment confirmed that the initial task of the PAC would be to identify and compare non-storage options for the purposes of assisting the department in developing Phase 1 of the HMP.\textsuperscript{647} Alberta Environment explained that these options could include mechanisms such as the voluntary buy-back of water licences, but not the expropriation of licences, because expropriation of water rights is inconsistent with the \textit{South Saskatchewan Water Management Policy}.\textsuperscript{648} The department planned to assist the PAC by providing the committee with information on available non-storage options, cost estimates and an assessment of each option’s ability to reduce or manage water demands.\textsuperscript{649} In addition to evaluating non-storage options, the PAC was to be responsible for reviewing revised IFN calculations for the Highwood River.\textsuperscript{650}

\begin{itemize}
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\item\textsuperscript{644} See Progress Report #2, \textit{supra} note 638 at 3.
\item\textsuperscript{645} \textit{Ibid.} at 14.
\item\textsuperscript{646} \textit{Ibid.}
\item\textsuperscript{647} \textit{Ibid.} at 4.
\item\textsuperscript{648} \textit{Ibid.}
\item\textsuperscript{649} \textit{Ibid.}
\item\textsuperscript{650} \textit{Ibid.}
\end{itemize}
The Applicant had an expectation that once the PAC was presented with all of the available information, it would conclude that storage is a necessary component of the HMP.\(^{651}\) By the time of the second report, the Applicant had mapped the three potential water storage sites (Woman’s Coulee, Tongue Creek and Stimson Creek) and had nearly completed an environmental site assessment study detailing the potential impacts of water storage at each location.\(^{652}\) Once completed, the Applicant would provide the study to the PAC.\(^{653}\) The Applicant expected that the PAC would assist it by evaluating and rating the sites.\(^{654}\)

In its second report, the panel suggested that the Applicant undertake a “fatal flaw” analysis of the three potential water storage sites to determine whether one or more of the sites could be eliminated from its review.\(^{655}\) The panel suggested this measure as a means to save time, and to assist the parties in ensuring that the March 2002 deadline could be met.\(^{656}\)

4.12.3 Progress Report #3 (June 2001)

The Second Panel held a public meeting on June 12, 2001 and released its third progress report shortly thereafter.\(^{657}\) The meeting was intended to explore whether the requirements of Board Order 9601-1 could be satisfied on time and to discuss the Applicant’s “fatal flaw” analysis.\(^{658}\) It was revealed during the meeting that there was significant concern over the limited amount of progress the PAC was making.\(^{659}\) It also became apparent that there was confusion over what role each of the Applicant, Alberta Environment, the Second Panel and the PAC was to play in the development of the HMP and the revised diversion

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\(^{651}\) Ibid. at 5.
\(^{652}\) Ibid. at 6.
\(^{653}\) Ibid.
\(^{654}\) Ibid.
\(^{655}\) Ibid. at 18.
\(^{656}\) Progress Report #4, supra note 455 at 3.
\(^{658}\) Progress Report #4, supra note 455 at 3.
\(^{659}\) Ibid.
plan. In addition, although the PAC had been provided with a draft, the updated and revised IFN analysis for the Highwood River had not yet been completed. The meeting also revealed that the Applicant had been unable to identify a “fatal flaw” in any of the three potential storage options. Although there was concern that the March 2002 deadline might not be met, the Applicant reported that it expected to submit a revised diversion plan (with or without additional storage) by the deadline. Alberta Environment similarly reported that it was working towards completing Phase 1 of the HMP by the deadline.

In addition to the progress reports being circulated by the Second Panel, the Applicant and Alberta Environment were themselves issuing joint monthly progress reports. In their June-July 2001 report, the departments made an attempt to address some of the uncertainty and confusion plaguing the PAC’s work by clarifying some of the tasks assigned to the committee. The departments explained that developing the diversion plan would require that several water management alternatives, or “scenarios”, be evaluated. Alberta Environment expected the PAC to evaluate these scenarios. The PAC would also be involved in developing the scenarios, which required the completion of the following tasks:

1. Determine supply and demand
   - How much water will there be in the rivers and streams?
   - How much water is needed to meet human and environmental needs now and in the future?

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660 Ibid. and Progress Report #3, supra note 657 at 16.
661 Progress Report #3, ibid. at 15.
662 Ibid. at 4.
663 See Ibid. at 8 and 11.
665 Ibid.
666 See “NRCBA Decisions”, supra note 452.
668 Ibid. at 1.
669 Ibid.
2. Assess storage options
   • What are the advantages and disadvantages of reservoirs, dugouts, and other methods of storing water?

3. Assess non-storage options
   • What are the advantages and disadvantages of water conservation, pipelines, economic incentives, and other alternatives to storage?

4. Involve the general public
   • What are the views and experience of people not represented on PAC?^670

The Applicant and Alberta Environment anticipated that a preferred sustainable water management scenario would be identified by February 15, 2002 and a revised diversion plan (based on this scenario) completed by March 29, 2002.^671

4.12.4 Progress Report #4 (February 2002) and Status of Revised Plan

The Panel held its fourth public meeting on December 1, 2001.^672 The Panel planned at this meeting to review the Applicant’s (now complete) comparative site assessment.^673 The Panel also intended to explore whether Phase 1 of the HMP could be completed and the outstanding requirements of Board Order 9601-1 satisfied before March 2002.^674

The Applicant’s comparative site assessment revealed Woman’s Coulee to be the preferred site for the construction of water storage facilities, assuming additional storage is required by the HMP.^675 The Woman’s Coulee site was selected because, compared to the other possible locations at Tongue Creek and Stimson Creek, storage at Woman’s Coulee

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^670 Ibid.
^671 Ibid. at 3.
^672 Progress Report #4, supra note 455 at 3.
^673 Ibid.
^674 Ibid.
^675 Ibid. at 6.
would have the least impact on the environment and be the most cost effective. The Applicant concluded, however, that the other two sites might be used for storage, depending on how much additional storage was found to be necessary by the HMP. The Second Panel accepts the Applicant’s choice of Woman’s Coulee as the most appropriate site and concludes that the Applicant has fulfilled the requirement set out in Board Order No. 9601-1 to complete a comparative site assessment.

At the December 1 meeting, the PAC expressed concern over its ability to meet the March 2002 deadline. The committee surmised that it would not have sufficient time to understand and critically assesses the volumes of technical information it was being presented with. The PAC stated that there was a significant amount of work to complete before the required water management scenarios could be developed and, as a result, finishing its work on time would “severely stress its volunteer members”. In addition, the IFN report was still in draft form and there were concerns over whether it was adequate. The PAC proposed that the deadline for deciding whether additional storage was needed be extended to June 2002. It also asked that the deadline for completing the diversion plan be pushed back to October 31, 2002. The panel agreed to these extensions.

The Applicant stated during the meeting that the Little Bow Reservoir would be completed in 2003 and, as a result, it would be necessary to develop and implement an interim diversion plan. An interim plan would be needed, according to the Applicant, even if storage was found to be required because it would take time to build the new storage

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677 Progress Report #4, ibid. at 6.
678 Ibid. at 23 and 24.
679 Ibid. at 4.
680 Ibid. at 21.
681 Ibid. at 27.
682 Ibid. at 21.
683 Ibid.
684 Ibid.
685 Ibid. at 7.
facilities. The interim plan was to be developed before the end of October 2002 in consultation with the PAC and it would remain in force until the HMP could be finalized and the revised diversion plan implemented. The Second Panel accepted the interim plan as necessary. The panel concluded its fourth progress report by stating that it would set a date to commence a formal hearing once it had received the revised diversion plan.

In 2004 the NRCB received a status letter from the Applicant indicating that it planned to complete a revised operational plan based on the water management scenario endorsed by the PAC. This plan would be incorporated into its revised diversion plan. According to the letter, the Applicant intended to present the operational plan to the public in September of 2004. If the public’s response proved positive, the Applicant would file the revised diversion plan and the other outstanding informational requirements of Board Order 9601-1.

4.13 Third Joint Panel to be Convened

Construction began on the TCP in 2002 and, in 2004, these components were completed and the TCP became operational. The Little Bow dam was eventually renamed the “Twin Valley Dam.” While the TCP was being constructed, Alberta Environment and the Applicant developed management scenarios for the operation of the components taking into account the natural range of wet and dry cycles, human needs and IFNs. Modeling

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686 Ibid.
687 Ibid.
688 Ibid. at 26.
689 Ibid. at 27.
690 “NRCBA Decisions”, supra note 452.
691 Ibid.
692 Ibid.
693 Ibid.
694 “Alberta’s Newest River Dam”, supra note 300.
695 Ibid.
696 Ibid.
indicated that additional storage would not resolve all the water issues and, as a result, drought operational rules were created.\textsuperscript{697}

It was not until December 14, 2006 that the Applicant submitted a revised diversion plan to the NRCB.\textsuperscript{698} The PAC ultimately concluded that the benefits of additional storage would not offset the economic and environmental costs associated with creating additional storage facilities.\textsuperscript{699} Accordingly, the revised diversion plan does \textit{not} include additional storage.\textsuperscript{700} The federal government is in the process of determining the process for reviewing the revised diversion plan and a new review panel (the third) will be established in 2007 to consider the plan.\textsuperscript{701}

\begin{footnotesize}
\textsuperscript{697} Ibid.
\textsuperscript{698} "NRCBA Decisions", supra note 452.
\textsuperscript{699} Ibid.
\textsuperscript{700} Ibid.
\textsuperscript{701} Ibid.
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5. COMPARISON AND APPLICATION

5.1 Introduction

In this Chapter, a comparison of the eco-pragmatic and CEAA approaches is undertaken. Aspects of the Highwood Decision are used to illustrate the latter. Following this comparison, eco-pragmatism is applied to the facts of the Highwood Decision. The goal being to explore whether, if eco-pragmatism were applied rather than CEAA, similar conclusions would have been reached. The comparison of the approaches and the application of eco-pragmatism to the Highwood decision expose some of the strengths and weaknesses of each method.

5.2 Comparison of Eco-pragmatism and CEAA

5.2.1 Key Norm

5.2.1.1 Farber’s Choice of Primary Norm

Farber writes in Eco-pragmatism that our “key norm” is that humans are entitled to a safe environment as well as to environmental preservation – “tempered by an awareness of competing goals”. Farber characterizes American society as profoundly committed to the environment and sees current environmental laws as already reflecting this key or primary norm. As discussed, he is opposed to using a neutral baseline when approaching environmental decisions because it requires a value judgment that there is equality between those who pollute and those who are affected. The public does not, in Farber’s view, accept that one has a right to pollute to the detriment of others. Farber argues that although we need a baseline that is in favour of public goods, it must be limited somewhat by private preferences – otherwise it is not practical and will not be supported over the long-term by the public.

It is at least questionable whether Farber has correctly identified (or overstated) society’s key norm. Flournoy, for example, disagrees with Farber’s claim that

702 Eco-pragmatism, supra note 4 at 199.
703 Ibid. at 113.
current environmental laws reveal a profound commitment to the environment. She argues instead that “environmental statutes tend to reflect human concerns that predate any dawning of environmental awareness – with only a modest introduction of new values or reasons for caring that are uniquely attributable to concern for the human relationship to the environment”. Boudreaux similarly argues that Farber overestimates the commitment of Americans to the environment. According to Boudreaux, “Farber states that Americans have made a commitment to clean air and water, but the compromises in our statutes show that the only consensus is that we want cleaner air and water than we had before”. Lazarus adds that although the introduction in the 1970s of the first major environmental statutes garnered wide public support, today (in the U.S.) a “starkly partisan divide exists in environmental law”. It should however be recognized that it is quite difficult to identify whether and to what extent the public is committed to protecting the environment. Schroeder, acknowledging this fact, has written that although it is debatable whether Americans have a profound general commit to the environment, “[w]hen environmental harms pose a discernible risk to human life or threaten serious adverse health effects, it is possible to discern a public favoring maximum feasible environmental control”.

It is also questionable whether Canadians can be said to share Farber’s key norm. A national poll by Environics International Ltd. in 1999 found that eight out of ten Canadians are of the view that environmental protection should have priority over economic growth. Notwithstanding the amount of concern expressed over environmental issues as evidenced in this poll, there appears to be some reluctance on the part of Canadians to change...
environmentally harmful behaviours when these changes give rise to opportunity costs or associated expenses. This is arguably illustrated by a 2007 poll conducted by Angus Reid Strategies. The results of the poll indicate that one-third of Canadians believe climate change to be the most important issue facing humanity. However, the poll also reveals that the wealthiest and most highly educated Canadians are the most reluctant to alter their lifestyles in order to consume less energy.

A 2001 study by the University of Victoria’s Eco-Research Chair in Environmental Law and Policy provides additional evidence that Canadians may not always consider the environment of utmost importance. The study applied twenty-five key environmental indicators and used information gathered by the Organization for Economic Co-operation and Development (OECD) to rank the G7 nations and nineteen other (European) nations. Canada’s overall ranking was second last – with the United States being the worst of all countries evaluated. It would seem that there is some disconnect between stated values on the part of Canadians and actual environmental performance. Given this disconnect, one would at least have to consider more closely the commitment of Canadians (and Americans) before concluding that our societies are “profoundly” committed to the environment.

An indication of public priorities was revealed during the EIA of the Little Bow/Highwood Project. There was, for example, little to no public support for alternatives such as demand-side management, canceling existing water licences (even with compensation), altering agricultural practices, or capping population growth and development. In fact, population growth and further development was assumed,

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711 C. Puxley, “Despite concern, SUV stays: Wealthy Canadians think green but won’t give up gas guzzlers, poll says”, The (Montreal) Gazette, 22 March 2007 at A-4. This poll was conducted online; 3,500 Canadians were surveyed.
712 Ibid.
713 Ibid.
715 The “G7” is comprised of the following: Canada, the United States, Japan, Germany, France, Great Britain and Italy.
716 Highwood Decision, supra note 8 at 8-12.
notwithstanding the limited and variable water supply in the Highwood River and Little Bow River basins.\textsuperscript{717}

Although Farber takes the position that society’s key norm exhibits a preference for environmental values, it is certainly questionable (based on the above discussion) whether such a norm actually exists or whether Farber has perhaps overstated the norm. It is also questionable whether Farber’s approach can actually satisfy those who identify an alternative (more economic) primary norm and achieve the reconciliation between “tree huggers” and “bean counters” that Farber is working towards. Perhaps what Farber has undertaken with his eco-pragmatic approach is a repackaging of the traditional environmental arguments in “economic” language that is more persuasive to those who do not share his view of the key norm. It also is arguable that Farber tells us what the correct outcome is (at least where there is a high degree of uncertainty) by setting the key norm and resolving difficult issues in favour of this norm. Farber may not, however, be able to convince those who are not already predisposed as he is to solve environmental dilemmas in this way.

A potential problem with Farber’s approach is that if society’s “key norm” changes, the environment will not be protected. As Heinzerling argues, “Farber’s environmental baseline, grounded as it is in public opinion, cannot serve the task Farber assigns to it, which is to provide a bulwark against generalized attacks on environmental protection.”\textsuperscript{718} Heinzerling explains that if the environmental baseline’s source is public opinion, then environmental law will change as opinion changes. And, as a result, “[t]he baseline could be dissolved tomorrow, and Eco-pragmatism would offer us almost nothing to argue against the change”\textsuperscript{719} This is an important observation, because (as Heinzerling notes) Farber is relying on there being a key environmental norm to justify his approach and to achieve the pro-environmental goals he identifies for eco-pragmatism.

\textsuperscript{717} See \textit{ibid}. at 3-2 and 3-3.
\textsuperscript{718} Heinzerling, \textit{supra} note 37 at 1430.
\textsuperscript{719} \textit{Ibid}. 101
5.2.1.2 CEAA’s Primary Norm

It has been observed that the “strategic purpose” of an EIA regime will have a profound effect on how assessments are undertaken and, in particular, on their “level of stringency, procedural certainty or clarity, and predictability of outcome”.  

The overarching goal of CEAA is the promotion and attainment of sustainable development in Canada.  

As set out in Chapter 3, sustainable development is defined in the Act to mean “development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”.  

The Panel in the Highwood Decision explains sustainable development in the following way:

An ideal development would be one that brings long-term social and economic benefits and has a beneficial or neutral effect on the environment. Developments should be planned and operated to minimize adverse impacts on the environment. However, where adverse effects on the environment are likely, the Panel believes that social or economic benefits should be weighed, balanced and evaluated in terms of the environmental effects and risks.  

Although CEAA requires that both environmental and economic values be taken into account when decisions regarding projects are made, the Act does not state which of these values is to have priority. This lack of a clearly stated priority objective has arguably resulted in misunderstandings on the part of the public about the role of CEAA. Boyd, discussing lawsuits arising out of environmental assessments in Canada, argues that one of the reasons for these lawsuits is the “ongoing conflict about what EIA is intended to achieve”.  

As Boyd rightly observes:

Environmental groups and Aboriginal people, who have filed most of the suits to date, see [EIA] as a forum for determining whether a particular project should

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721 See CEAA *supra* note 1, preamble.

722 *Ibid.*, s. 2(1).


724 Boyd, *supra* note 139 at 160.
proceed”, whereas “government and industry tend to view [EIA] as a process to 
refine how a project will proceed ... [emphasis original].\textsuperscript{725}

Although there is no clear statement in the Act that environmental or
economic considerations are to be preferred in particular circumstances, the mechanics of
CEAA and the results of its application suggest a general preference for development. Elder
observes that in the years that EIA has been practiced in Canada, projects that have a
“positive financial cost-benefit ratio” have been approved.\textsuperscript{726} According to Elder, decision-
makers in Canada emphasize economic growth and profit in determining whether a project
should be permitted to proceed.\textsuperscript{727} Boyd similarly observes that government assumes that
projects under review “will proceed because economic growth is paramount”.\textsuperscript{728} Penney
concludes that EIA in Canada has always fallen within the “development paradigm” and that
CEAA is closer to the “development model” of EIA than the “sustainability model”.\textsuperscript{729}

CEAA’s seeming bias in favour of development can arguably be witnessed in
its requirement to take mitigation into account when determining the nature of a project’s
impacts. As Gibson observes, CEAA focuses on the avoidance or mitigation of significant
adverse environmental effects, rather than on improvements to the environment.\textsuperscript{730} And, as a
result, although the stated objective of CEAA is sustainability, the real goal of the Act is to
reduce environmental impacts.\textsuperscript{731} A bias in favour of development seems obvious when one
considers that projects are permitted to proceed even where it cannot be shown with any

\textsuperscript{725} Ibid.
\textsuperscript{726} Elder, supra note 138 at 126.
\textsuperscript{727} Ibid.
\textsuperscript{728} Boyd, supra note 139 at 160.
\textsuperscript{729} Penney, supra note 204 at 269. Penney describes the development and sustainability paradigms in the
following way. The development model involves self-assessment, with the goals of gathering information
on environmental impacts and using that information to mitigate such impacts. There is no real emphasis on
cumulative effects or long-term monitoring, the focus being on individual projects – with little public
participation. Within the development paradigm the commitment to economic growth is unquestioned. The
focus of the sustainability model is on achieving no net negative environmental impacts. Alternatives to
projects, and the impacts of such alternatives (including social impacts), are considered. Scientific
uncertainty must be addressed, as must incomplete data, inadequate baseline information and ongoing
monitoring. There is an emphasis in the sustainability model on significant and meaningful public
participation.

\textsuperscript{730} “Major Deficiencies Remain”, supra note 139 at 100.
\textsuperscript{731} Ibid. at 98.
certainty that mitigation will be successful. The Panel’s treatment of mitigation in the Highwood Decision serves as useful illustration.

In reaching its decision about whether to approve the TCP, the Panel concludes, “the residual environmental impacts of the project could be substantially mitigated by a successful compensation plan”. It recognizes, however, that this assumption “will only be warranted if an adequate plan is successfully implemented”. As discussed in the preceding chapter, the Panel notes that there were difficulties with a similar plan implemented at Pine Coulee, and (as a consequence) it expressed concern over whether the proposed plan for the Project was “realistic”. Because of the challenges encountered with the Pine Coulee habitat compensation plan, the Panel suggests that the proponent consider additional methods of habitat compensation not set out in its application. Interestingly, unlike the Highwood Project, the Pine Coulee Project was not particularly complex or controversial. The reliance on mitigation by the Panel in the Highwood Decision illustrates that even where a project’s approval is contingent on successful mitigation and there is uncertainty with respect to the adequacy of the proposed mitigation measures, CEAA allows development to be preferred. Moreover, development may be favoured even where analogous mitigation efforts have in the past proven troublesome.

A preference for development can also be seen in the provisions of CEAA that permit a project to proceed where significant adverse environmental effects are likely, provided these effects are “justified” the circumstances. Although the Act does not include any guidance, Hobby suggests:

In view of the transparency of the environmental assessment process and decision-making required by the Act, there would have to be demonstrable and likely

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732 Highwood Decision, supra note 8 at 8-30.
733 Ibid.
734 Ibid.
735 Ibid. at 5-47.
736 Ibid. at 8-30.
737 “Alberta’s Newest River Dam”, supra note 300.
compelling public benefits for permitting a project to be carried out notwithstanding significant adverse environmental effects.\footnote{738} It should be emphasized however that because there is no requirement in CEAA that a certain level of environmental quality be maintained, the justification test provides a basis for allowing any type of adverse effect to be permitted if a particular project is found to be economically or socially advantageous.

The emphasis on development can also be observed in how decision-makers have exercised their authority and discretion under CEAA. In the Highwood Decision the Panel refused, for example, to recommend that the original diversion plans be approved because, among other reasons, the plans were not based on a scientific IFN. Nonetheless, the Panel chose to recommend for approval the remainder of the Project in anticipation of revised operation plans being prepared by the Applicant. This arguably illustrates a bias in favour of project modification and ultimate approval, regardless of concerns and unknowns with respect to significant aspects of a project. The Panel’s decision is in keeping with the high approval rate of projects subject to a CEAA assessment.

Another example of how the exercise of discretion under CEAA can favour project approval is evidenced by what the Panel chose not to consider. Although there was an emphasis by the Panel in the Highwood Decision on remedying historical environmental problems and resource over allocation, the Panel refused to entertain project alternatives that would limit development and growth. The Panel also refused to consider limiting or revoking current water rights and licences. The Panel exhibits in its decision a preference for preserving property rights and facilitating further development. The Panel itself recognizes that “the three-component project is being proposed as one more step in the historical process of trying to overcome the natural limitations to water shortages in the basin”.\footnote{739}

\footnote{738 Hobby, supra note 187 at II-112.} \footnote{739 Highwood Decision, supra note 8 at 6-13.}
5.2.2 Decision Methodology

5.2.2.1 Eco-pragmatism’s Environmental Baseline

As explained in Chapter 2, Farber argues that significant risks to the environment should be eliminated to the extent feasible, except when the costs of addressing such risks exceed the potential benefits. There is a presumption in favour of the environment, but this presumption is a rebuttable one. Farber describes this element of his methodology as the ‘environmental baseline’. The most challenging aspect of eco-pragmatism is applying the baseline. The lack of detail provided makes it difficult to apply in a real-life situation without some measure of modification or further development. As Grodsky explains:

One question left unresolved is whether the baseline should be a measure of environmental quality, such as ecosystem biodiversity or a level of air or water quality, or whether it should be a behavioral mandate ... In other words, an unresolved issue is whether the environmental baseline is an affirmative standard to which we should aspire, a statutory mandate that we should obey, or some kind of default mechanism that will be triggered if certain context-specific obligations are not met.\(^{740}\)

Angelo similarly recognizes that Farber does not explain fully the baseline and proposes using the maintenance of ecological integrity.\(^{741}\) She argues that using ecological integrity as the baseline provides a reference point to measure human changes to the environment.\(^{742}\) Any new regulation would be expected to maintain ecological integrity, although it need not perfectly preserve the status quo.\(^{743}\) In Angelo’s view, given that ecosystems are not in equilibrium, the goal of environmental protection “should not be to suppress all human-caused disturbances, but rather to prevent human-caused disturbances that are not in line with the natural disturbance regime of the ecosystem”.\(^{744}\) This requires historical data (which is often unavailable), an acknowledgement that human disturbances can be very different from natural ones and recognition that there is a degree of uncertainty in

\(^{741}\) Angelo, supra note 7 at 133.
\(^{742}\) Ibid. at 137.
\(^{743}\) Ibid.
\(^{744}\) Ibid. at 141.
how ecosystems will react to human-caused disturbances. \(^{745}\) According to Angelo, disturbances caused by people must be limited to those that the particular ecosystem can successfully absorb. \(^{746}\)

Although Wildermuth sees Farber's eco-pragmatic approach as worthwhile, she also observes that his baseline concept is underdeveloped. \(^{747}\) She argues that Farber's presumption in favour of the environment should be guided by a more detailed vision of the environment and suggests using Leopold's concept of "land-health" to conceptualize environmental limits and quality. \(^{748}\) Simply put, land-health is fostered when biological diversity is sustained, land is used in a sustainable manner, land is seen as beautiful as well as useful, and human population density does not exceed the carrying capacity of the land. \(^{749}\) The author observes that this concept is similar to ecosystem management and suggests that land-health serve as eco-pragmatism's baseline. \(^{750}\) Wildermuth is of the view that Farber needs more "ecology" in his approach and should pay more attention to preserving ecological function. \(^{751}\)

Grodsky takes issue with the starting point Farber uses for his baseline, arguing that cost and feasibility need not be considered at the outset. Grodsky explains:

Environmental pragmatism should not necessarily be wedded to the notion of starting from a "deliberate middle," but should recognize that it may be equally pragmatic to start from a clear rule and adjust, recognizing the feedback loops inherent in the political process, and the various incentive structures operating on regulated entities, outside interest groups, and regulators themselves. \(^{752}\)

Grodsky gives as an example the hard baseline imposed by the U.S.'s national ambient air quality standards. There is no flexibility in the regulation other than in how states implement

\(^{745}\) Ibid.
\(^{746}\) Ibid.
\(^{748}\) Ibid. at 1157-58.
\(^{749}\) Ibid. at 1160.
\(^{750}\) Ibid. at 1167.
\(^{751}\) Ibid. at 1164.
\(^{752}\) Grodsky, supra note 740 at 1063.
the standards.\textsuperscript{753} The standards would not appear eco-pragmatic initially (as they are set not taking into account feasibility, only health), but when looking at implementation, they arguably exhibit the characteristics of a hybrid approach.\textsuperscript{754} Grodsky argues that sequence matters. Setting a baseline that is difficult to meet (\textit{i.e.}, one that is not feasible or economic initially) may push industry to be inventive and eventually achieve compliance.\textsuperscript{755}

Grodsky’s approach (like that of both Angelo and Wildermuth) recognizes that there needs to be some firm environmental objective or rule. In addition, Grodsky gives law the task of shaping human behaviour. This use of law might not conform to eco-pragmatism’s emphasis on a revealed pro-environment norm and it may not satisfy those who are predisposed to economic values. Although it is necessary to further develop the baseline in order to apply it, the changes suggested by Angelo and Wildermuth seem to alter Farber’s approach, perhaps making it less pragmatic. They “harden” the environmental baseline, and what appears to be lost is a clear integration of economic values. They seem to defeat (at least somewhat) Farber’s goal of reconciliation and retreat to the “tree hugger” side of the divide over environmental disputes. As will be discussed elsewhere, it may be unavoidable to favour environmental values in a more concrete way than Farber advocates in order to achieve the goals he sets for eco-pragmatism.

\textbf{5.2.2.2 CEAA’s “Baseline”}

Under CEAA, a project will not be recommended for approval if it is likely to result in significant adverse environmental effects, unless these effects are justified in the circumstances. Significance is to be assessed taking into account mitigation. In other words, the process involves reducing the severity of the affects to an acceptable level and then if necessary (\textit{i.e.}, the effects are still found to be significant) determining whether they are justified. In eco-pragmatic terms, this can be described as CEAA’s “baseline”. The main elements of the baseline, mitigation and justification, are considered below in detail.

\textsuperscript{753} \textit{Ibid.} at 1052.
\textsuperscript{754} \textit{Ibid.}
\textsuperscript{755} \textit{Ibid.} at 1053.
(a) Mitigation

Mitigation under CEAA involves the carrying out of measures that are technically and economically feasible that reduce the severity of adverse environmental impacts.\(^{756}\) For example, in the Highwood Decision the Panel observes that for almost all aspects of the Project the proponent “has identified the best mitigation measures available and, where equivalent measures were evaluated, lower-cost alternatives have been selected.”\(^{757}\) Effectiveness of the potential mitigation measures is also important. The Panel highlights the fact that the proponent has elected to expand the Woman’s Coulee Reservoir to mitigate the impact of the diversion plans on the Highwood fishery. In selecting this mitigation measure, writes the Panel, the proponent has prioritized effectiveness over cost.\(^{758}\)

Mitigation usually involves the project proponent making commitments to lessen the impact of the project by altering or supplementing the project in some way. In the event damage is caused or where there is uncertainty about potential effects, an undertaking to implement mitigation measures is also acceptable for the purposes of obtaining approval under CEAA. In the Highwood Decision, for example, the Panel accepts the proponent’s proposals for mitigating changes in ground water levels, should these occur, and compensating any landowners who might be affected.\(^{759}\) Persons or bodies (including regulatory agencies) besides the proponent may commit to carry out mitigation that is not directly related to the project in an attempt to lessen the project’s cumulative impacts. In addition, the CEAA decision-maker may look to statutes other than CEAA under which mandatory mitigation requirements are imposed. To illustrate, the Panel states that if it, … concludes, on a preliminary basis, that a certain condition would be a necessary component of any approval issued in accordance with the NRCBA, the Panel could consider the effects from both an NRCB perspective and a CEAA perspective, as though the project were to incorporate such a condition.\(^{760}\)

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\(^{756}\) See CEAA supra note 1, s. 16(1)(d) and Highwood Decision, supra note 8 at 5-53.

\(^{757}\) Highwood Decision, ibid. at 6-13.

\(^{758}\) Ibid.

\(^{759}\) Ibid. at 8-31.

\(^{760}\) Ibid. at 1-2.
In short, all mitigation commitments and conditions are factored into the assessment of the significance of the potential environmental effects of the project under review, and may be relied upon in determining whether a project will be permitted to proceed. As a result, a project may be recommended for approval under CEAA on the assumption that mitigation measures will be carried out (as discussed above).

Reliance on mitigation measures over which the responsible authority (or other CEAA decision-maker) has no control was addressed in 2001 by the Federal Court in *Environmental Resource Centre v. Canada (Minister of Environment).*[^761] The court held that a responsible authority will be exercising its discretion under CEAA in an unreasonable manner if it relies on mitigation measures it cannot enforce[^762]. CEAA was amended in 2003 in response to this decision[^763]. The amendments make it clear that a responsible authority is entitled to take into account any mitigation measures whose implementation the responsible authority can ensure, as well as those measures that the responsible authority is “satisfied” will be implemented by any other person or body. A responsible authority is entitled therefore to rely on mitigation measures that are enforceable only by another regulatory authority (including a provincial government), as well as on measures that any person or body voluntarily undertakes. As has been suggested by Benevides, these amendments to CEAA might encourage an abdication of the federal responsibility to ensure mitigation is pursued[^764].

Relying on voluntary mitigation measures to arrive at a conclusion that a project will not have significant adverse environmental effects is obviously problematic. Relying on statutes other than CEAA also presents a challenge. Employing a number of statutes to reach a desired result (in this case reduced environmental impacts) is arguably efficient and avoids duplicate regulation. It can, however, create a situation in which a failure under one Act can have a cascade effect, impacting assumptions and determinations

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[^762]: Ibid. at para. 156.
[^763]: See CEAA, supra note 1, ss. 20(1.1) and 37(2.1), amended by S.C. 2003, c. 9, ss. 11 and 17, respectively. See also “Real Reform Deferred”, supra note 141 at 224.
[^764]: “Real Reform Deferred”, ibid.
made under another: If the conditions imposed under other statutes are not enforced, the objectives of CEAA cannot be met.

Other than refusing to grant approval, there are no penalties contained in CEAA for failing to carry out those mitigation measures upon which permission to proceed with a project was based. Responsible authorities may add conditions relating to mitigation to the permits, licences and other approvals that triggered the application of CEAA but, as Gibson recognizes, enforcement varies because the various Acts under which these approvals are given differ. Gibson describes this manner of enforcement as requiring “each responsible authority to find a way of using its own inappropriate tools to accomplish an unfamiliar and largely unwelcome task”. Most responsible authorities are not “environmental” departments or agencies. In addition, this multi-statute approach of enforcing mitigation measures can also mean inconsistency and unpredictability for project proponents.

The CEAA approach to evaluating environmental effects (i.e., assessing the effects by first taking into account mitigation) arguably increases uncertainty. There are already many unknowns with respect to the background condition of the environment and the potential effects of almost any project. Relying on the effectiveness of mitigation measures when predicting environmental effects compounds this uncertainty. This is especially true where there is no guarantee that mitigation will be carried out.

(b) Justification

The second aspect of CEAA’s baseline consists of a “justification” test. Under the Act, a project will not be recommended for approval if it is likely to result in significant adverse environmental effects, unless these effects are justified in the circumstances. Although, there is no guidance in CEAA that would assist decision makers in

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765 For further discussion, see R.B Gibson, “The New Canadian Environmental Assessment Act: Possible Responses to its Main Deficiencies” (1992) 2 J.E.L.P. 223 at 246-50 [hereinafter “The New CEAA”].
766 Ibid. at 246-47.
767 Ibid. at 247.
768 See Ibid.
determining whether significant adverse effects are justified, the Significance Guide provides the following:

Cost-benefit analysis cannot be used to determine significance in federal [EIAs], because it compares the estimated environmental costs and benefits of a project, whereas the Act clearly states that only adverse environmental effects are to be considered in determining significance and likelihood. Although cost-benefit analysis could be used to justify proceeding with a project that is likely to cause significant adverse environmental effects, this justification can take place only after the likelihood of the significant adverse environmental effects has been determined.\(^{769}\)

Notwithstanding this statement, justification, including the application of cost-benefit analysis, seems to occur early in the CEAA process and appears to have an impact on whether the anticipated effects of a project are characterized as significant and likely. This is not to suggest that CEAA decision-makers are purposely violating the Act or refusing to apply the Significance Guide. Rather, it would seem that some manner of non-conscience cost-benefit analysis is occurring throughout the impact assessment process. This might explain why the vast majority of projects reviewed under CEAA are approved, although there appear to be few reviews that include Cabinet undertaking a justification analysis.\(^{770}\) Since the Act was amended in 2003, not one project has been referred to Cabinet.\(^{771}\) This means that since 2003, none of the projects reviewed under the Act (as a comprehensive study or panel review) have been found to have the potential to result in significant adverse environmental effects that might be justifiable. Although a proponent might be inclined to withdraw its application under CEAA when it becomes clear that its project is unlikely to be approved, this does not fully explain the rarity of justification analyses undertaken.

There are many types of projects that have the potential for both significant adverse environmental impacts and high economic return. Some proponents of these types of projects would certainly be willing to risk a justification analysis and the possible denial of

\(^{769}\) Significance Guide, supra note 239 at 192.

\(^{770}\) See e.g. the Competitiveness Report, supra note 720, s. 4.2.5 wherein the authors note that, “[a]lthough, there are opportunities for a determination to be made as to whether or not any adverse environmental effects are justifiable under the circumstances, such discretion is not commonly applied”. See also Boyd, supra note 139 at 153.

\(^{771}\) This statement is based on personal communications Jennifer Wilson, Environmental Assessment Officer, Canadian Environmental Assessment Agency (6 July 2007). Ms. Wilson was unable to provide statistics concerning the pre-2003 process.
their project in the hopes that their project would be allowed to proceed. The low number justification of analyses undertaken by Cabinet suggests that justification is occurring in an informal way when mitigation measures are accepted as reducing adverse impacts to insignificant levels. In other words, reduced or mitigated impacts are viewed as acceptable because the project is seen as worthwhile – not because these impacts are acceptable from a purely environmental (science-based) perspective. In addition, the need to refer a project to Cabinet for a final decision on whether its adverse impacts are justified might serve to discourage a finding of significant adverse environmental effects. Put another way, the threshold for finding that significant effects cannot be mitigated down to acceptable levels is going to be quite high given that such a finding results in a need to engage Cabinet. Presumably, responsible authorities are reluctant to involve Cabinet. There likely exist administrative or political pressures that serve to dissuade authorities from elevating CEAA reviews to the Cabinet level.

The way CEAA’s “baseline” is framed and applied is troubling. The Act allows us to conclude that environmental impacts are being sufficiently mitigated and significant adverse effects are not being permitted in most circumstances. Unless the justification test is engaged, we do not have to ask whether the benefits of a particular project are more valuable than the environmental harm caused by the project. The Act gives us false comfort by focusing on mitigation and it allows us to (in most cases) avoid the difficult question of whether a project is really worth its associated impacts.

There are a number of ways that the justification test under CEAA might be improved. Elder writes that the notion of “unreasonable risk” could help determine whether information obtained during an EIA justifies a project’s approval. For example, a risk would be unacceptable if there are project alternatives that are less risky and entail the same or greater benefits; the benefits and risks are not spread in a manner reflective of equality; those at risk have not been provided with sufficient information; or there has been insufficient involvement of those at risk. Elder argues that the burden of proving that a

772 Elder, supra note 138 at 132.
risk is reasonable would rest with the project proponent. Although this approach is appealing because it places the burden of justification on those who will benefit most directly from the project, it would be problematic. In particular, a private proponent would be forced to consider alternatives to the project it has planned and received corporate approval for, and this would presumably include a consideration of alternatives that it could not participate in. It is doubtful that a proponent would be motivated to incur the additional costs associated with preparing and presenting complete and objective evidence on alternatives. Most of its effort would likely be put into justifying its own project as proposed, perhaps resulting in poor evidence being placed before the decision-maker.

Gibson argues that the justification test could be refined so that a project would be justified only if it could be said to promote sustainability. This is in keeping with the already existing references to sustainable development in CEAA. However, other than as set out in section 16(2)(d), CEAA does not instruct how sustainability is to be implemented. Section 16(2)(d) merely requires that during comprehensive studies, panel reviews and mediations, consideration be given to the “capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future”. Notwithstanding the Act’s references to sustainability, CEAA assessments have tended to focus on the mitigation of adverse environmental effects and, as Gibson recognizes, sustainable development entails more than mitigation. Gibson suggests that project proponents be required to make “positive contributions to improving ecological and community conditions for the long term”. This would include incorporating environmental enhancement and resource recovery into project plans. In Gibson’s view, a project that causes significant environmental effects should only be justified if it “makes a

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774 Elder, ibid. at 132.
776 See CEAA, supra note 1, preamble and s. 4(1)(b).
777 “Favouring the Higher Test”, supra note 775 at 42.
778 Ibid. at 40 and 43.
779 Ibid. at 43.
net positive overall contribution to environmental sustainability.” Even if CEAA were amended to incorporate Gibson’s suggested approach, there would still be a need to ensure that there is no a bias towards finding effects insignificant in an attempt to avoid the justification analysis altogether.

Although there has been a tendency to concentrate on mitigation, Gibson has identified two instances where panels have focused on sustainability, these being in the assessments of the Voisey’s Bay Mine and Mill Undertaking (Labrador) and the Red Hill Creek Expressway North-South Section Project (Ontario). The environmental impact statement guidelines for each of these projects, issued in 1997 and 1999 respectively, required the proponents to demonstrate how the following goals of sustainable development will be advanced by their projects:

1) the preservation of ecosystem integrity, including the capability of natural systems, local and regional, to maintain their structure and functions and to support biological diversity;

2) respect for the right of future generations to the sustainable use of renewable and non-renewable resources; and

3) the attainment of durable social and economic benefits.

The Panel in the Highwood decision also employed sustainability as its frame of reference. As set out in Chapter 4, the Panel identified the following three key principles (or criteria) that served as a threshold for further consideration of the Project’s effects:

First, water management projects must respect existing riparian rights and water licenses, and should not result in loss or injury to existing water rights.

Second, water management projects must be able to meet basic environmental criteria to avoid significant adverse effects.

Third, water management projects must be able to meet current and future needs for domestic, riparian, and municipal needs, and other consumptive uses.

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781 Ibid.
782 “Favouring the Higher Test”, supra note 775 at 43.
783 Ibid.
784 Highwood Decision, supra note 8 at 8-5.
Unlike the treatment of sustainability in the guidelines for the Voisey's Bay Mine and the Red Hill Creek Expressway reviews, the Highwood Panel's articulation is concerned less with environmental integrity and more with meeting human needs and protecting existing resource rights. These three examples suggest that even where sustainability (rather than mitigation) is the focus, the definition given sustainability will differ among assessments. The lack of guidance in CEAA on how to apply sustainability allows for this inconsistency.

In 2002 a number of changes to CEAA were proposed that would have moved the Act away from its mitigation focus towards sustainability. Instead of being subject to the justification test, projects would have been prohibited altogether from causing significant adverse environmental effects and each would have been required to make positive overall contributions to the environment over time.\footnote{785} These amendments were ultimately defeated.\footnote{786}

Even if projects were required to make an "overall" contribution to sustainability, as set out in the proposed 2002 amendments and recommended by Gibson, consideration would need to be given to the implications of focusing the analysis on "net" environmental gains or losses. Arguably, something is lost in this type of analysis. The decision-maker could, in effect, be shifting impacts around the landscape with unintended and perhaps unrecognized consequences. For example, from an ecological perspective, it may make more of a difference where fish habitat is located, rather than how much actually exists.

5.2.2.3 Differences Between the Approaches

Both CEAA and eco-pragmatism contemplate mitigating or reducing adverse environmental impacts to the extent feasible. Eco-pragmatism employs cost-benefit analysis as a backstop to avoid unreasonable environmental regulations (i.e., the costs of the regulation exceed the benefits). CEAA uses the concept of "justification" in a similar way. CEAA allows cost-benefit analysis to be used to justify proceeding with a project that is

\footnote{785} "Real Reform Deferred", supra note 141 at 223, citing Evidence, Commons Committee November 21, 2002 at 1125 hrs.
\footnote{786} "Real Reform Deferred", ibid. at 223, fn 103.
likely to result in significant adverse environmental impacts. Although CEAA is silent on this issue, the justification test is a kind of public interest of test, such as that found in the NRCBA. The eco-pragmatic baseline is also akin to a public interest test, although Farber has gone some way to ensure more environmental protection by giving the test more substance and shifting the burden of proof to the polluter when uncertainty exists (as discussed below).

5.2.3 The Precautionary Principle and Uncertainty

5.2.3.1 Eco-pragmatism and the Implementation of the Precautionary Principle

As set out in Chapter 2, Farber incorporates the precautionary principle into his eco-pragmatic approach. He argues that regulatory agencies should have the burden of establishing that the environmental risks they are regulating in respect of are significant and their regulations and remedies are feasible. The burden of proof should however be shifted to the polluter when the agency has evaluated all available information and cannot satisfactorily estimate the risks and the feasibility of remedies. In short, Farber advocates placing the burden on those who wish to take environmental risks in circumstances where there is uncertainty and the possible consequences serious. Accordingly, if a proposed project has the potential to result in environmental harm and there is uncertainty as to whether that harm will materialize, the proponent should bear the burden of establishing harm will not result. Farber argues that shifting the burden in this way can function as a useful “tiebreaker”.

The allocation of the burden of proof in cases of uncertainty is significant because it determines the outcome. As Flournoy observes, assigning the burden is not a technical issue, but a value question. The question is whether development or the environment will have the advantage where there is uncertainty – and it is inevitable that uncertainties will arise in respect of proposed projects and activities. For example in the Highwood Decision the Panel notes “attempts to accurately predict the water quality effect of ‘fine-tuning’ small changes in the volume of diversions were fraught with difficulties,

787 “In search of an Environmental Ethic”, supra note 10 at 76.
reflecting the complex interactions between water quantity, quality, and aquatic habitat”. Farber is in favour of giving environmental values the advantage in situations characterized by uncertainty, at least where the potential environmental impacts are significant.

The difficulty with the eco-pragmatic approach is that significance must be defined. In addition, by employing significance as the threshold there are going to be cases of uncertainty that are not addressed in favour of environmental values. Some of these cases are going to result in negative impacts, the cumulative effects of which may have a serious impact on the environment.

5.2.3.2 CEAA and the Implementation of Precautionary Principle

CEAA provides that assessment is required “early as is practicable in the planning stages of the project and before irrevocable decisions are made”. According to the Act, government is committed to “anticipating and preventing the degradation of environmental quality” and, in this vein, the purposes of CEAA include ensuring “that projects are considered in a careful and precautionary manner before federal authorities take action in connection with them”. This reference to the precautionary principle was added to CEAA in 2003. The rationale for the amendment was recognition on the part of the legislature that CEAA is itself “a precautionary tool”. In 2003 the following provision requiring that the precautionary principle be applied was also added:

In the administration of this Act, the Government of Canada, the Minister, the Agency and all bodies subject to the provisions of this Act, including federal authorities and responsible authorities, shall exercise their powers in a manner that protects the environment and human health and applies the precautionary principle [emphasis added].

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788 Highwood Decision, supra note 8 at 4-16.
789 See CEAA, supra note 1, ss. 5, 8, 9, 10, 11 and 54.
790 Ibid., preamble.
791 Ibid., s. 4(1)(a).
792 See S.C. 2003, c. 9, s. 2.
793 “Explanation of CEAA Amendments”, supra note 130 at 31.
794 CEAA, supra note 1, s. 4(2), as amended by S.C. 2003, c. 9, s. 2.
It has been suggested that this new provision will give better guidance to decision-makers and may change the outcome of project assessments.\textsuperscript{795} To date there has been no judicial consideration of the provision.\textsuperscript{796}

It should be noted that even before 2003 the precautionary principle was recognized in some CEAA assessments. For example, the environmental impact statement guidelines for the Red Hill Creek Expressway project required the application of the principle.\textsuperscript{797} In addition, although the Panel in the Highwood Decision does not mention the principle specifically, it errs at times on the side of caution. It refuses for example to assume that because aquatic species found in the Highwood River are adapted to a certain level of disturbance they can tolerate more disturbances.\textsuperscript{798} The Panel also refuses to assume that licensed water users will continue to cooperate with Alberta Environment in the future by sharing available water during low flow events, regardless of legal entitlements.\textsuperscript{799} Notwithstanding these examples, there has apparently been relatively little attention paid the principle in the field of impact assessment.\textsuperscript{800}

According to the federal government, the precautionary principle is a rule that confronts uncertainty in the assessment and management of risk by recommending “uncertainty be handled in favour of certain values – health and environmental safety – over others”.\textsuperscript{801} CEAA instructs responsible authorities to apply the principle, but does not provide guidance on exactly when or how the principle is to be implemented. There is generally debate over how “extreme” precautionary measures should be, and no consensus at international law on how the principle should be applied.\textsuperscript{802} Extreme measures would

\textsuperscript{795} See “Real Reform Deferred, supra note 141 at 204.
\textsuperscript{796} This statement is current to June 27, 2007.
\textsuperscript{797} See the “Environmental Impact Statement Guidelines for the Review of the Proposed Red Hill Creek Expressway North-South Section Project” (October 15, 1999), Annex 4, as cited in “Favouring the Higher Test”, supra note 775 at 44.
\textsuperscript{798} Highwood Decision, supra note 8 at 4-39.
\textsuperscript{799} Ibid, at 4-40.
\textsuperscript{800} “Favouring the Higher Test”, supra note 775 at 46-47.
\textsuperscript{801} “Explanation of CEAA Amendments”, supra note 130 at 35.
include requiring proponents to demonstrate an absence of significant environmental harm associated with their proposed activities.\footnote{803}{Ibid. at 120.} The federal government appears to advocate a more mild articulation of the principle.

In 2003 the Privy Council released a guidance document entitled \textit{A Framework for the Application of Precaution in Science-based Decision Making about Risk}, which sets out guiding principles for applying precaution when making decisions in the context of environmental, health and safety regulatory activity.\footnote{804}{\textit{A Framework for the Application of Precaution in Science-based Decision Making about Risk} (2003), online: Government of Canada Privy Council Office <http://www.pco-bcp.gc.ca/default.asp?Language=E&Page=publications&Sub=precaution&Doc=precaution_e.htm> (date accessed 26 May 2005).} The framework is not intended to create legal obligations, but to be flexible and encourage better overall decision-making.\footnote{805}{Ibid. at 2, 3 and 6.} According to the document, “[g]overnments can rarely act on the basis of full scientific certainty and cannot guarantee zero risk.”\footnote{806}{Ibid. at 3.} Moreover, although there may be scientific uncertainty, “society expects risks to be managed and living standards enhanced”.\footnote{807}{Ibid. at 2.} Simply put, the precautionary principle is to be applied where a decision must be made, there is a risk of serious or irreversible harm, and scientific uncertainty exists.\footnote{808}{Ibid. at 2.} The framework includes five principles to guide in the application of precaution.

First, the government recognizes that it is obligated to apply precaution under federal law and international agreements.\footnote{809}{Ibid. at 6.} Second, although decisions are to be guided by society’s willingness to accept risk and its desired level of protection against risk, there must be a scientific basis for applying precaution.\footnote{810}{Ibid. at 7.} In other words, a scientific basis is a prerequisite to application of the precautionary approach. Accordingly, if the public expresses a low tolerance for a particular risk and demands a high level protection, but there is no scientific basis, the precautionary approach is unwarranted. The third principle provides that sound scientific information is necessary and the party who is taking the action

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\footnote{803}{Ibid. at 120.}
\footnote{805}{Ibid. at 2, 3 and 6.}
\footnote{806}{Ibid. at 3.}
\footnote{807}{Ibid. at 2.}
\footnote{808}{Ibid. at 2. Note however that the federal government does not view the precautionary principle or approach a rule of customary international law: \textit{ibid.}}
\footnote{809}{Ibid. at 6.}
\footnote{810}{Ibid. at 7.}
that gives rise to the risk (e.g., extracting a natural resource) should usually be the one to provide the information upon which the risk can be assessed.\textsuperscript{811} This may change however depending upon who is best situated to obtain the necessary information.\textsuperscript{812} (Interestingly, the framework does not acknowledge that a proponent would have little motivation to gather information that might result in its project or activity being denied.) The fourth principle for the application of precaution emphasizes that there may be a need to re-evaluate decisions.\textsuperscript{813} This would occur where new scientific information has become available or societal values have evolved (e.g., the population’s tolerance for risk has increased or decreased).\textsuperscript{814} Finally, the fifth principle recognizes that there must be meaningful public involvement in the process of applying precautionary measures.\textsuperscript{815}

The federal government’s approach does not contemplate a particularly strong definition of the precautionary principle – it is “business as usual” unless risk appears, rather than we do not act unless it can be established that there are no unacceptable risks. Moreover, there is a high threshold to be met before the principle is to be applied. There must be a serious risk or possible irreversible harm together with scientific uncertainty. As others have observed, “Canada has largely wandered towards weak versions of precaution by emphasizing the need for ‘sound science’ and cost-effectiveness, and giving primacy to short-term economic gain”.\textsuperscript{816} Even with the addition in 2003 of a specific reference to the precautionary principle, the impact of the principle may be limited. Courts tend to defer to the judgment of those given discretion by parliament to administer environmental legislation.\textsuperscript{817} It would seem unlikely therefore that courts would force through their decisions the implementation of a stronger interpretation of the principle in Canada.

\textsuperscript{811} Ibid. at 5, 7 and 8.
\textsuperscript{812} Ibid. at 5.
\textsuperscript{813} Ibid. at 9.
\textsuperscript{814} Ibid.
\textsuperscript{815} Ibid.
\textsuperscript{816} “Canada and the Precautionary Principle”, supra note 802 at 156.
\textsuperscript{817} See ibid. at 129 wherein the authors discuss Brighton v. Nova Scotia (Minister of Agriculture and Fisheries) (2002), 206 N.S.R. (2d) 95 (N.S.S.C.). In this case the precautionary principle was relied on to challenge a decision of the Minister of Agriculture and Fisheries to license a proposed aquaculture farm.
CEAA employs a less extreme application of the precautionary principle than Farber advocates. There is no suggestion in the Act that in cases of uncertainty a proponent prove that its project will not harm the environment or, alternatively, that its project fosters sustainability. In fact, CEAA does not give one a clear sense of when and how the precautionary principle should be applied. The framework document released by Cabinet merely recommends that the principle be implemented where there is a risk of serious or irreversible harm and scientific uncertainty exists. The requirement for serious or irreversible harm likely means that only those decisions which involve a justification analysis will result in a rigorous application of the principle. The justification test can result in the approval of any project, regardless of how adverse its environmental effects. The possibility of project “justification” arguably runs contrary to the precautionary principle, making CEAA appear internally inconsistent.

5.2.4 Project Alternatives

CEAA requires that alternatives to each proposed project be considered where the project is undergoing a comprehensive study, mediation or panel review. Only those alternatives that are technically and economically feasible need to be considered. If a project is being screened, alternatives are addressed at the discretion of the responsible authority. The review of project alternatives is generally quite limited. As Penney observes, at no time during the CEAA process is there a requirement to consider alternatives to the project itself – rather, alternative means to carrying out the project are considered. (Note that eco-pragmatism does not specifically require that project alternatives be considered.)

Notwithstanding the provisions of CEAA, it is contrary to a proponent’s interest to invest a significant amount of effort in an exploration of project alternatives. The proponent will have devoted time and resources to the project as proposed. As Gibson

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818 CEAA, supra note 1, s. 16(2).
819 Ibid., s. 16(2)(b).
820 Ibid. s. 16(1)(d).
821 Penney, supra note 204 at 263.
rightly argues, consideration of alternatives is undertaken too late in the assessment.\(^{822}\) By the time alternatives are addressed, the proponent has already settled on the project particulars and, as a result, the process becomes one in which the proponent attempts to justify the decisions it has already made rather than a useful exploration of alternatives.\(^{823}\) Moreover, there is no guidance in the Act about what a review of alternatives should include. Nikiforuk notes that this "lack of clarity ... results in big expenses as companies scramble to cover all conceivable bases".\(^{824}\)

The review of project alternatives by the Panel in the Highwood Decision included more than a consideration of alternative means to carrying out the Project. This may have been because the proponent was government and the Project of a public, rather than private, nature. In addition to examining alternative storage and diversion facilities, the Applicant explored whether non-structural alternatives, such as demand-side management, might provide a solution to water supply shortages.\(^{825}\) The Applicant concluded that irrigation and water management practices in the region were both efficient and modern and could not be much improved to conserve water or decrease demand for it.\(^{826}\) Interestingly, although demand-side management was recommended by a number of experts because of its potential to reduce the economic and environmental costs of increased water storage, it never received significant community support.\(^{827}\) As mentioned above, evidence presented at the public hearings indicated that there was little interest in reducing demands for water or limiting growth due to insufficient water supplies.\(^{828}\)

Alternatives should be considered, but only in a limited way at the individual project assessment level. It is certainly productive to require proponents to explore alternative means to carrying out their proposed projects and to have them justify their project plans. In particular, proponents should be prepared to address alternative ways of

\(^{822}\) "Major Deficiencies Remain," supra note 139 at 100.
\(^{823}\) Ibid.
\(^{824}\) Nikiforuk, supra note 204 at 21.
\(^{825}\) Highwood Decision, supra note 8 at 3-5.
\(^{826}\) Ibid.
\(^{827}\) See "Alberta's Newest River Dam", supra note 300.
\(^{828}\) See discussion in Highwood Decision, supra note 8 at 3-5.
constructing and operating their projects that might have fewer adverse environmental impacts. However, it is not practical to require a proponent to identify actual alternatives to a project that it intends to proceed with and likely has corporate approval and preliminary financing in place for. Such a proponent will not likely be motivated, and may in fact be unable, to present fully the alternatives to its project – especially those alternatives in which it would be unable to participate. For example, if a corporation plans to construct a natural gas-fired generating facility, it would be unreasonable to require it to address the possibility of meeting energy demand through wind generation.

Development alternatives should be evaluated and limits sets on the types of projects that may proceed in a given area at a given time before proponents (especially private entities) get to the point of applying for project approval. In other words, governments should undertake comprehensive development planning and create integrated land-use frameworks. CEAA (and provincial assessment legislation) should be applied to these plans and frameworks at the time they are created. Gibson is correct that the best time to consider alternatives is at the level of policies, plans and programs, not necessarily at the project level. However, as explained in Chapter 3, CEAA does not currently require strategic environmental assessments.

5.2.5 Public Participation

Farber identifies public opinion as central to the making of environmental decisions, but he does not address whether or how public views should be incorporated into his decision making process. It may be that he sees public opinion (in a general sense) as already expressed through the “primary norm”, and included through eco-pragmatism’s recognition of economic values.

Public participation is generally viewed as a key aspect of the EIA process. Tilleman for example has argued that the degree of public participation directly affects the quality of an EIA and, as a consequence, the quality of the decision made about the project.

830 “Major Deficiencies Remain”, supra note 139 at 100-01.
under review. CEAA requires public participation be permitted during comprehensive studies and panel reviews. When a comprehensive study is undertaken the responsible authority is required, for example, to consult with the public concerning the scope of the project and the factors to be considered during the assessment. Panel reviews involve public hearings, which typically provide the community where the project will be situated an opportunity to participate in the assessment. Rutherford and Campbell write that public participation in panel reviews is critical as it may affect the project proponent directly by encouraging modifications to the project and indirectly by influencing decision-makers through the recommendations made by panels.

Although the preamble to CEAA states that government is committed to facilitating public involvement in the assessment of projects, public participation in screenings is permitted only at the discretion of the responsible authority. A responsible authority may give the public an opportunity to participate in a screening where it is of the opinion that such participation is “appropriate in the circumstances – or where required by regulation”. Currently, only one regulation contemplates public input. The discretionary nature of public participation in the screening process has been described as

832 CEAA, supra note 1, ss. 21(1), 21.2 and 22.
833 Ibid., s. 34.
834 Ibid., s. 21(1).
835 Ibid., s. 34(b).
836 “Time Well Spent?”, supra note 158 at 82.
837 CEAA, supra note 1, preamble.
838 Ibid., ss. 18(3) and (4). As discussed in Chapter 3 there have been no assessments under taken by way of mediation. Depending on the nature of the project, mediations have the potential to include at least some degree of public participation, see ibid., s. 29 and s. 2(1).
839 Ibid., s. 18(3). CEAA does not state when public participation in a screening is warranted. There is however an applicable ministerial guideline that provides some assistance; see Ministerial Guideline on Assessing the Need for and Level of Public Participation in Screenings under the Canadian Environmental Assessment Act, online: Canadian Environmental Assessment Agency <http://www.ceaa-acee.gc.ca/013/006/ministerial_guideline_e.pdf> (date accessed: 28 January 2007).
840 See s. 11(1) of the Canada Port Authority Environmental Assessment Regulations, SOR 99-318, which provides that: “[i]f the [port authority] is aware of any special circumstances of a project that would make the project of interest to the public or if public participation is required by any Act of Parliament or regulation made under it, the [port authority] shall give the public notice of the screening and shall give the public an opportunity to participate in the screening”.

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“one of the most glaring weaknesses of CEAA”.\textsuperscript{841} Although nearly all EIAs are conducted as screenings, the public is invited to participate in only 10 to 15 per cent of these assessments.\textsuperscript{842} Gibson suggests that this level of participation may be insufficient to make participation meaningful.\textsuperscript{843}

Even where public participation is required or allowed, it may prove difficult for the public to secure sufficient resources to gather and present adequate evidence to decision-makers. Private proponents will have often made a significant investment in getting a project to the point where approval is requested and these proponents may have access to legal advice and other resources in a way that may be beyond what the public, or even government, has access to. Although there is some participant funding available,\textsuperscript{844} and Canada is unique in the funding of EIA participants,\textsuperscript{845} the level of funding has apparently “plummeted” over time.\textsuperscript{846} The lack of funding is arguably an impediment to effective participation.\textsuperscript{847}

The federal government preserves for itself the power to (on a project-by-project basis) balance social, economic and environmental values. This arguably gives government the control and flexibility it needs to respond to the ever-evolving public interest. It is difficult however to envision how government can act in the public interest if it is not receiving input from the public for the majority of EIAs for which it is responsible.

\textsuperscript{841} Penney, \textit{supra} note 204 at 264.
\textsuperscript{842} Boyd, \textit{supra} note 139 at 152-153.
\textsuperscript{843} “Major Deficiencies Remain”, \textit{supra} note 139 at 91.
\textsuperscript{844} For information see \textit{Guide to Participate Funding}, online: Canadian Environmental Assessment Agency <http://www.ccee-acee.gc.ca/012/013/index_e.htm> (date accessed 28 January 2007). See also Dyck, \textit{supra} note 161 at 246-49.
\textsuperscript{846} “Real Reform Deferred”, \textit{supra} note 141 at 212. By way of illustration, $469,000 was allocated in 1995-1996, while less than $100,000 was anticipated for 2002-2003: \textit{ibid}.
\textsuperscript{847} “Time Well Spent?”, \textit{supra} note 158 at 83. See also Dyck, \textit{supra} note 169 at 246-49.
Moreover, environmental assessments are typically the sole process for public input regarding proposed developments and undertakings.  

5.2.6 Adaptive Management

5.2.6.1 The “Eco” in Eco-pragmatism

Although Farber does not address this himself, Ruhl explains that the “eco” in eco-pragmatism represents the “rapidly developing science of ecosystem dynamics” and the “emerging policy discipline of ecosystem management”. Rather than being in balance, the environment is in flux and Farber, recognizing this, argues for environmental law that can respond quickly to change. Farber is advocating a dynamic form of regulation typically referred to as “adaptive management”. This method can be described as:

... a ‘learning-by-doing’ approach that views policies and management interventions as explicitly experimental and provisional, and looks to revise both our understanding of ecosystems and subsequent policies as we learn from an iterative series of policy experiments.

Adaptive management has not been implemented legally in any significant way. As Tarlock observes:

The structure of environmental law and the culture of the agencies that implement it are based on either the preservation of an undisturbed nature devoid of humans (but rich in fish, birds, and charismatic fauna) or pollution control rather than ecosystem management. We look for quick, technological fixes to mitigate the worst adverse

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848 “Favouring the Higher Test”, supra note 775 at 47.
849 “Working Both Ends”, supra note 11 at 526.
850 See Eco-pragmatism, supra note 4 at 205-06.
851 B. Karkkainen, “Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism” (2003) 97 Minn. L. Rev. 943 at 948 [hereinafter “Adaptive Management”]. Karkkainen observes that the experimental approach inherent to adaptive management is similar to the approach taken by philosophical pragmatists. The author explains that Dewey, for example, advocated an approach to social policy and law that was experimental and flexible, with constant revision (i.e., it was adaptive). Dewey’s view being that “the best we could do is proceed incrementally and experimentally, judging the value of our ideas not against some abstract standard of perfect truth but by their practical consequences – i.e., would they be confirmed by subsequent experience in a way that these ideas could be put to use in solving human problems?” Karkkainen argues that it is not necessary to accept Dewey’s views in their entirety; the approach is useful for addressing uncertainty (especially in respect of ecosystems) regardless of whether one is ultimately of the view that there is transcendental truth: ibid. at 957-59.
852 “Working Both Ends”, supra note 11 at 545.
environmental impacts of activities rather than the sustained maintenance of functioning ecosystems.\textsuperscript{853}

In addition, the current approach to environmental law is fragmented, with various regulators addressing different ecosystem components.\textsuperscript{854} Karkkainen argues that as a result of its piecemeal approach, environmental law tends “to ignore the synergistic effects and complex interdependencies among the various components and stressors that make up the ecosystem.”\textsuperscript{855} In those circumstances where adaptive management has been implemented by government agencies, it has usually been given a narrow definition.\textsuperscript{856}

Although adaptive management has found significant support, especially among environmental scientists, it is not without its detractors. Its emphasis on responsiveness means that adaptive management focuses less on substantive rules and procedures than traditional methods of environmental regulation. This, it has been argued, may result in less accountability on the part of regulators (e.g., fewer opportunities for judicial review).\textsuperscript{857} In addition, it has been suggested that adaptive management’s flexible and collaborative approach is “premised on the naive assumption that regulated parties will willingly cooperate in constructing new and potentially costly regulatory requirements – in effect, to help prepare the noose for their own hanging.”\textsuperscript{858} In other words, businesses values certainty and will not be motivated to incur the costs associated with regularly altering their practices to benefit the environment. Powerful economic incentives or disincentives would likely be needed to overcome the general resistance businesses have to changes that do not obviously improve profitability.

\textsuperscript{854} “Adaptive Management”, supra note 851 at 947.
\textsuperscript{855} Ibid.
\textsuperscript{856} Ibid. at 953.
\textsuperscript{857} See ibid. at 963.
\textsuperscript{858} Ibid.
5.2.6.2 The CEAA Approach to Adaptive Management

The concept of adaptive management was added to CEAA in 2003. The Act does not explain how adaptive management is to be employed, but according to the government it involves “the implementation of new or modified mitigation measures over the life of a project to address unanticipated environmental effects” and allows for the “adoption of improved mitigation measures (e.g., due to technological advances) over the life of a project”. As is typically the case when regulatory bodies implement adaptive management, CEAA employs a narrow definition. Although it specifically contemplates using adaptive management to adjust mitigation measures and to improve EIA generally, CEAA does not aim in any systematic way to refine environmental policies and laws or improve ecosystem science.

Non-legislative materials published by government provide that follow-up programs are to be used to determine the need for adaptive management. A follow-up program is defined in CEAA as a program for verifying the accuracy of the assessment of a project and determining the effectiveness of any mitigation measures employed. This type of post-decision monitoring to verify predictions and allow for the adjustment of mitigations measures is considered essential to any EIA process. Although under the Act follow-up programs are required for assessments that are conducted by way of comprehensive study, panel review or mediation, there is no requirement to implement a follow-up program after a project has been screened. The responsible authority may however choose to require a follow-up program in the context of a screening assessment. Responsible authorities have discretion as to the content and scope of all follow-up programs.

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859 S.C. 2003, c. 9, s. 18.
860 "Explanation of CEAA Amendments", supra note 130 at 115. For example in the Highwood Decision the Panel, recognizing the public’s concern over the success of the various mitigative measures to be implemented, requires the proponent to file annual mitigation progress reports in order to gauge success and determine whether improvements are required. See Highwood Decision, supra note 8 at 8-54 and 8-55.
861 See CEAA, supra note 1, s. 38(5).
862 "Explanation of CEAA Amendments", supra note 130 at 115.
863 CEAA, supra note 1, s. 2(1).
864 See "Towards a Smarter NEPA", supra note 281.
865 CEAA, supra note 1, ss. 38(1) and (2).
As is the case elsewhere, effective post-approval monitoring has proven a challenge in Canada, and follow-up has generally been described as inadequate or dismal. Moreover, there has been a failure to systematically investigate the utility and quality of assessments undertaken. CEAA would be improved if follow-up programs were mandatory (at least for all project types if not for each individual project) and these programs were required to collect the information necessary to determine whether EIA procedures are accurately predicting environmental impacts. The information collected could be used to improve individual assessments and to test the overall EIA system. Without standardized follow-up programs, it is impossible to determine the effectiveness of Act. More specifically, without consistent and proper follow-up “bad science is not exposed, ineffective mitigation methods are not abandoned, [and] politicians or technicians are not held accountable”. It has been suggested that community-based or citizen monitoring would be one model for ensuring monitoring is undertaken.

The Canadian government does not appear to have an appetite for a robust implementation of adaptive management. This is may be because it is difficult to implement and would require a restructuring of the current regulatory framework, which would have a serious impact on the way business is typically conducted. Government would certainly be met with resistance in attempting to implement adaptive management in a manner different from how it is currently implemented under CEAA.

868 See Nikiforuk, supra note 204 at ii.
869 Ibid. at 23.
870 See “Citizen Involvement”, supra note 866. In this article the authors attempt to address deficiencies in post-project monitoring by drawing on citizen monitoring, sustainable livelihoods, and local knowledge. A number of innovative case studies are discussed.
5.2.7 Predictability and Consistency of Decisions

5.2.7.1 Certainty under CEAA

EIA in Canada has a number of characteristics that may lead to unpredictability in individual project assessments and inconsistency among assessments. One of these characteristics, a lack of legislation, was highlighted in a comparative study of the EIA regimes of Canada, the United States, the United Kingdom, Germany, France, Australia, Japan and Chile undertaken in 2000 for the Agency (the “Competitiveness Report”). The purpose of the study was to rank Canada in relation to its primary competitors. The study revealed that the steps for completing an EIA are only partially prescribed in legislation in Canada, whereas they are prescribed to a greater extent in most of the countries compared. Much of the EIA process in Canada is set out in non-binding guidance materials (as discussed in Chapter 3). This is of concern because clear criteria are arguably required to foster certainty and are necessary in order to provide justification to the public regarding decisions that are made under CEAA. As observed by Gibson, “[w]hen decision-making is guided only by vague criteria, even well-intentioned decision-makers are likely to make arbitrary and inconsistent judgments.”

The lack of legislated guidance means that CEAA has been drafted in a manner that requires responsible authorities to exercise a significant amount of discretion when undertaking an assessment. For example (as discussed in detail in Chapter 3), responsible authorities (or the Minister) define projects for assessment purposes, identify which factors will be considered relevant and determine the scope of these factors. Responsible authorities also determine for the vast majority of EIAs who will be permitted to participate and to what extent. Most importantly, decision-makers exercise discretion when deciding whether a particular project will be likely to cause significant adverse

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871 Competitiveness Report, supra note 720.
872 Competitiveness Report: Executive Summary, supra note 845. For example, the report found that the means of “scoping” for assessment purposes is not as formalized in Canada as in the other regimes. See also Green, supra note 213 at 807 wherein the author discusses the absence of guiding principles for analyzing cumulative environmental effects.
874 Ibid. at 229. See also “Real Reform Deferred”, supra note 141 at 196.
environmental effects. This is not to suggest that discretion is avoidable or unnecessary in
the EIA process. Assessments under CEAA do require flexibility because the process is an
anticipatory one that must respond to the unique nature of most projects, as well as to
complex (and ever-changing) environmental, economic and social situations and concerns.
In addition, scientific knowledge is constantly evolving and authorities regularly encounter
unanticipated factors and effects when conducting assessments. The need for flexibility in
EIAs does not however mean that major components of the process should be left entirely to
the discretion of authorities. For example, CEAA could require responsible authorities
assessing projects that emit pollutants into the air to consider the effects of the expected
release on the relevant airshed. Imposing requirements of this nature would help to ensure
that similar projects are assessed in a similar way.

Another characteristic of EIA in Canada is that many different federal
departments and agencies act as responsible authorities. In addition, a responsible authority
can be both the project proponent and the EIA decision-maker.875 This can obviously result
in a conflict of interest. Jeffrey writes that when CEAA was introduced in the House of
Commons there was intense debate indicating that departments were not amenable to having
the Minister or an independent body impose limits on project or policy initiatives considered
to be within their own jurisdiction.876 The provinces were similarly opposed to having the
federal government encroach upon areas of provincial jurisdiction (e.g., natural resources)
through EIA legislation.877 It has been argued that by giving numerous departments and
agencies decision-making powers, including the power to review their own projects, the
legislature has politicized the EIA process.878

The variety of responsible authorities and the lack of an independent decision-
maker (or least a single decision-maker) are of particular concern because many responsible

876 Jeffrey, supra note 170 at 1085.
877 Ibid.
878 See ibid, at 1080-81 and Dyck, supra note 169 at 340. Gibson suggests that an alternative to the current
approach under CEAA would be to have panels make the decision regarding whether a project should
proceed (because they are more independent), but allow Cabinet to overrule these decisions, see “The New
CEAA”, supra note 765 at 244.
authorities are in charge of matters that do not relate directly to the environment. As a result, there is often a lack of technical and process knowledge on the part of those undertaking EIAs.\(^{879}\) In 2003 the government, recognizing the deficiencies in responsible authority knowledge and experience, created the position of federal “environmental assessment coordinator” to help ensure that assessments include input from expert (non-responsible) authorities and specialists.\(^{880}\)

An additional characteristic that arguably leads to unpredictability and inconsistency in assessments is the apparent lack of will at times on the part of government to undertake EIAs.\(^{881}\) Gibson notes that throughout the history of EIA responsible authorities have been reluctant to implement the process.\(^{882}\) Nikiforuk goes further, arguing that the application of the process has been pursued “selectively and shadily”.\(^{883}\) Nikiforuk cites as an example DFO’s practice of issuing “letters of advice” to those whose development activities might trigger an EIA under CEAA.\(^{884}\) Kwasniak explains that proponents of projects that would harm fish habitat at times consult with DFO and, with the department’s assistance, alter their projects such that no authorization under the \textit{Fisheries Act} is required.\(^{885}\) DFO will issue a letter of advice to this effect. Because no authorization is actually sought by the proponent under the \textit{Fisheries Act}, CEAA is treated by DFO as having not been triggered.\(^{886}\) Kwasniak concludes that DFO’s avoidance of assessments under CEAA in this way is incorrect in law.\(^{887}\)

\(^{879}\) See \textit{Competitiveness Report: Executive Summary}, supra note 845.
\(^{880}\) S.C. 2003, c. 9, s. 7. See the \textit{Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements}, SOR 97/181.
\(^{881}\) Nikiforuk, \textit{supra} note 204 at 2.
\(^{882}\) “The New CEAA”, \textit{supra} note 765 at 249.
\(^{883}\) Nikiforuk, \textit{supra} note 204 at 1.
\(^{884}\) \textit{Ibid.} at 16-17.
\(^{886}\) \textit{Ibid.}
\(^{887}\) \textit{Ibid.}
5.2.7.1 Certainty under Eco-pragmatism

As with CEAA, eco-pragmatism requires an application of concepts such as “significance”, “feasibility” and “uncertainty” when making decisions about development. Farber recognizes that these types of concepts fail to give “hard, definitive” answers. Applying eco-pragmatism necessarily involves the exercise of discretion and can undoubtedly lead to inconsistent results and perhaps unintended consequences. To illustrate, Farber advocates a presumption in favour of the environment, which acts as a tiebreaker in cases of uncertainty. But it is not clear how much uncertainty is necessary before we are to resort to the presumption. If a high degree of uncertainty were a necessary prerequisite, there is a risk that decisions (both individually and cumulatively) would result in negative environmental impacts. Such a result would undermine eco-pragmatism’s overarching goal of environmental protection. Eco-pragmatism also fails to provide any guidance on how a project or undertaking should be (in CEAA terms) “scoped”. For example, eco-pragmatism does not answer the question of whether the assessment of a proposed oil well should include an assessment of potential downstream impacts or risks, such as combustion of the product. As discussed, defining a project for the purposes of an EIA will often determine the results of the assessment.

Farber writes that there is a need for consistency and coherence in environmental policies and decisions over time. Mintz correctly observes however that “as a result of its intrinsic flexibility, its experimentalism, and its pluralism, pragmatic analysis sometimes fails to yield specific, predictable, and unavoidable solutions to policy disputes”. To be fair, Farber is not trying to create an environmental policy or statute and, therefore, it is not surprising that eco-pragmatism lacks the detail that would be necessary to ensure consistency in results. Farber’s aim is to create a decision-making framework within which difficult social and environmental questions can be addressed and reasonable solutions found that recognize both environmental and economic values. As Ruhl writes, Farber presents eco-pragmatism as “a new decision making philosophy for environmental law, not a

888 See Eco-pragmatism, supra note 4 at 91.
889 Ibid. at 10.
890 Mintz, supra note 13 at 23.
new normative theory of correct outcomes". Regardless, Farber is attempting to protect the environment (i.e., facilitate decisions that accord with our “primary norm”) through his eco-pragmatic approach. It is questionable however how eco-pragmatism can meet this goal if there is little predictability and consistency in its application.

5.3 Limitations of Reserve Mining as a Case Study

As indicated in Chapter 2, Farber uses Reserve Mining for the purposes of developing and justifying aspects of his eco-pragmatic approach. Given its facts, the case is clearly useful for exploring how risk and uncertainty might be addressed. The limitations of the case, as an example and guide, should however be acknowledged. The primary issue in Reserve Mining involved how to best confront a potential risk to human health. This type of environmental risk is arguably a different type of risk than those environmental risks that do not impact human health. It would seem reasonable to conclude that our tolerance for risk would be lowest when human life is somehow endangered. In other words, we are likely to be more willing to address risk and endure any negative economic (or other) consequences where the risk is to ourselves, rather than to aspects of the environment that do not obviously or immediately benefit us. The “dramatic facts”\(^{892}\) that characterize Reserve Mining arguably do not characterize the majority of situations giving rise to environmental risks. Less dramatic risks may have significant cumulative effects on environmental quality, especially over the long-term. It is not clear whether Farber’s human-centered approach would sufficiently address risks that have little direct effect on people. It is at least worth questioning what type of an environment would result from a process that is focused primarily on serving human interests. It may be that Farber is of the view our overarching ‘environmental norm’ will mean that serving human interests will result in the protection of non-use environmental values.

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\(^{891}\) “Working Both Ends”, supra note 11 at 524.

\(^{892}\) Eco-pragmatism, supra note 4 at 16
5.4 Application of Eco-pragmatism to the Little Bow/Highwood Project

5.4.1 Approach

Eco-pragmatism provides that except when the costs of addressing significant risks to the environment exceed the potential benefits, such risks should be eliminated. The most obvious way to define the “significant risk” addressed in the Highwood Decision is to equate the risk with the Project itself. This approach is suitable for the purposes of comparing CEAA and eco-pragmatism because the same question (whether the Project should proceed) can be asked of each. Before applying the environmental baseline to the facts set out in the Highwood Decision, Farber’s approach to time horizons and adaptive management will be applied to these facts.

It should be emphasized that applying eco-pragmatism requires one to exercise judgement. This speaks to the difficulty of the issues Farber is attempting to address through eco-pragmatism and the flexibility inherent in the approach. Others applying eco-pragmatism to the Highwood Decision may make different decisions and arrive at conclusions different from those described below. It should also be noted that the data that eco-pragmatism requires for a cost-benefit analysis is not provided in the Highwood Decision, as the Panel presents a more qualitative analysis than perhaps Farber would advocate.

5.4.2 Lengthy Time Horizons

In reaching its conclusions the Panel applied a framework of “sustainability of ecosystems over time”.893 The Panel finds that although the Project will not resolve all of the adverse cumulative effects on the environment caused by previous development activities and water management strategies, it will “set the stage” for addressing at least some of these problems and will generally improve conditions.894 The Panel writes:

... increasing demands for water in the Highwood and Little Bow River basins is inevitable, especially in terms of municipal growth ... However, the Panel has

893 Highwood Decision, supra note 8 at 8-4.
894 Ibid. at 8-33.
concluded that the establishment of an IFN for the Highwood River and an approved operating plan for the project is the best way of ensuring that environmental water requirements are better met in the future.\footnote{Ibid, at 8-34.}

The Panel is attempting to confront overuse and create a situation that gives future populations a chance to inherit a region that is characterized by sustainable resource management. The Panel is not willing however to deny current residents the opportunity for continued growth and development. Eco-pragmatism would treat the time horizons contemplated by the Panel in a similar fashion.

Farber provides that long-time horizons should be addressed through the concepts of “discounting” (for more proximate generations) and environmental stewardship (for populations in the distant future). Accordingly, both eco-pragmatism and the Panel focus on the present and near future, with some consideration given to the more distant future. Farber advocates trying to “avoid substantial risks of future disaster to remote descendents”\footnote{Eco-pragmatism, supra note 4 at 155.} This is not unlike the Panel’s approach. Neither eco-pragmatism nor the Panel expect current communities to sacrifice too much for the benefit of future populations.

5.4.3 Adaptive Management

Eco-pragmatism advocates implementing a form of dynamic (or adaptive) regulation. A certain amount of regulatory flexibility is necessary, according to Farber, in order for law to respond to social, environmental and scientific changes. In the Highwood Decision follow-up programs consisting of post-Project monitoring are employed. These programs are aimed at verifying the effectiveness of those mitigation measures undertaken. The purpose being to address unanticipated environmental effects and implement new or modified mitigation measures as these become necessary due to new information or technological advances. An application of eco-pragmatism would result in a similar, but arguably more comprehensive approach.

Eco-pragmatism employs a definition of adaptive management that is broad enough to ensure that changes can be made to regulatory frameworks, rather than just in

\footnote{Ibid, at 8-34.} \footnote{Eco-pragmatism, supra note 4 at 155.}
respect of individual assessments. Even taking into consideration the 2003 amendments to CEAA (which occurred after the publication of the Highwood Decision), the type of adaptive management implement by the Act is not as robust as Farber’s suggested approach. This is not to suggest that eco-pragmatism would expect CEAA itself to include an adaptive management mechanism that would allow for (and require) the Act to be modified extensively when appropriate, but the means of accomplishing such modifications would need to be included in some type of legislation or policy applicable to the Act and its EIA process.

5.4.4 Environmental Baseline

5.3.4.1 The Diversion Plans

Although the Panel ultimately approved the TCP, it refused to approve the diversion (i.e., operating) plans. The Panel took issue with the unscientific nature of the Preliminary IFN upon which the plans were based because this created in the plans a risk to the environment. In addition, under the diversion plans certain irrigators would face water deficits if the Preliminary IFN were to be maintained. Also of concern to the Panel was the possibility that current and future consumptive use would be at risk because conveyance flows would not necessarily be maintained. Moreover, the plans failed to provide for contingencies. Although the plans were found to be unacceptable, the Panel concluded they could be satisfactorily reworked and deferred its decision on whether to approve them.

Like the Panel, Farber emphasizes good science when making environmental decisions. As set out in the Highwood Decision, the Preliminary IFN is not a scientific benchmark to consider consumptive trade-offs against, but is a compromise between consumptive demands and actual instream needs. Although Farber’s aim is to formulate a framework within which competing and contrary values can be balanced and acceptable trade-offs arrived at, an application of eco-pragmatism would lead to a rejection of engaging in trade-offs between environmental and other values without first establishing a good scientific basis from which to anchor these decisions.
Because of the unscientific nature of the IFN, there is little certainty that the Project would produce its intended benefits, i.e., the successful maintenance and development of agriculture, industry and communities. In other words, under the eco-pragmatic approach little weight would be given to opportunity costs, because the Project is likely to fall short of its goals due to insufficient conveyance flows and an inability to address contingencies. In addition, there would be costs with proceeding, in particular, the negative impact on certain irrigators. Such factors would offset at least some of the potential benefits of the Project. Applying eco-pragmatism, one would conclude that the Applicant should bear the burden of justification because of the uncertainty inherent in the outcome due to the lack of science-based information. Given the lack of information, the burden cannot be satisfied and the diversion plans should not, therefore, be supported. A decision to revise the plans (rather than reject them outright) is in keeping with the environmental baseline principle that risks should be eliminated to the extent feasible. Eco-pragmatism would support continuing with the project because of its potential to remedy, at least to some degree, historic over allocation of water in the Highwood River and Little Bow River basins.

5.3.4.2 The Three-component Project (TCP)

Eco-pragmatism advocates beginning with a presumption in favour of the environment. As applied to the Project, this would translate into a presumption in favour of supporting the environmental quality of the Highwood River and Little Bow River basins. These basins have a history that is characterized by unsustainable resource use. Because of the unsustainable approach to resource management in the past, the basins have suffered a number of negative impacts, including a loss of habitat for prairie animal species and poor water quality due to pollution. The quality of the environment continues to deteriorate in the basins. In other words, there exist pre-Project environmental risks.

Proceeding with the Project will itself give rise to environmental risks, including risks to aquatic habitat and fisheries. Some of the risks associated with the Project are characterized by more uncertainty than others. For example, the Panel recognizes that it is "in the position of reviewing a much desired water supply project with a much less
favourable and less certain outcome with regard to water quality for multi-purpose uses". The Panel deals with uncertainty by focusing on the potential impacts to those ecosystem components that more is known about, analogizing where possible and making conservative assumptions. The Panel does not (and CEAA does not require it to) address how the burden of proof should be allocated. Eco-pragmatism provides that when risks to the environment are unclear, but potentially serious, the precautionary principle should be observed and the burden of justification shifted to those who wish to take such risks. Because there is risk and uncertainty associated both with proceeding with the TCP and not proceeding with the TCP, it would not be useful to allocate the burden to either the Applicant or those opposed in these circumstances.

According to eco-pragmatism, a threat or risk to the environment should be eliminated to the extent feasible. CEAA similarly requires that technically and economically feasible measures be implement to avoid or mitigate any significant adverse environmental effects of a proposed undertaking. The Panel exercises what jurisdiction it has to ensure that mitigation will be undertaken in order to lessen the negative impacts of the TCP. Where the Panel does not have the requisite jurisdiction, it makes recommendations regarding mitigation. An application of eco-pragmatism would result in a similar approach.

Eco-pragmatism requires consideration be given to whether it is feasible to avoid risks altogether. It employs cost-benefit analysis to determine whether the costs of addressing risks (i.e., through project avoidance) would exceed the potential benefits. Under CEAA, cost-benefit analysis is more properly an aspect of the “justification” test. Because the Panel finds that all of the significant adverse environmental affects of the TCP can be sufficiently mitigated, the assessment does not give rise to a justification analysis. Cost-benefit analysis is however undertaken by the Panel as an aspect of its application of the public interest test under the NRCBA.

There are costs associated with the Project, even after taking into account mitigation measures and assuming that these measures will be both implemented and successful. For example, the flooding of the new reservoir will result in a loss of contiguous

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897 Highwood Decision, supra note 8 at 5-18.
patches of (already rare) mixed grass prairie. In addition, the TCP will adversely impact habitat and negatively affect a number of endangered or vulnerable species. The Panel recognizes that mitigation will not reduce these effects entirely and, as a consequence, residual impacts are anticipated.

The primary benefit associated with the Project is that it will address (or at least attempt to address) the unsustainable situation with respect water and water use in the basins. For example, the Project is intended to prevent further deterioration in water quality and counter the extreme variability in the water supply. As a result, the Project is expected to be of some benefit to the environment. Although the Project will have negative impacts on Treaty 7 Aboriginal peoples, the Panel finds that the Project will (overall) provide social benefits to many residents in the Mosquito Creek and Little Bow River basins.\footnote{Ibid. at 8-52.} According to the Panel there will be the potential for increased social stability, employment will be maintained and there may be economic benefits.\footnote{Ibid. at 8-35.} In particular, the TCP is expected to increase the well being of the residents through the provision of a more secure water supply.\footnote{Ibid. at 8-52.} The Panel finds that this "positive social effect is compelling" and that it "must be given appropriate weight in reaching any overall conclusions regarding the three-component project".\footnote{Ibid.}

The Panel concludes that "[o]n balance, weighing the predicted adverse effects and the positive benefits ... the three-component project is in the public interest and the adverse effects are an acceptable cost to gain the benefits".\footnote{Ibid. at 8-53.} The cost-benefit analysis carried out by the Panel appears to be primarily a qualitative assessment. It seems to involve more of a balancing of factors than Farber would advocate. Eco-pragmatism supports a more structured cost-benefit analysis, wherever possible. The PAC appears to have undertaken a more precise cost-benefit analysis. It will be recalled that the committee concluded that the benefits of additional storage (as advocated by the Panel) would not offset the economic and
environmental costs associated with creating additional storage facilities. Given the already unsustainable situation, the application of eco-pragmatism would lead to a similar (combined) result – i.e., approval of the TCP, with a refusal to support additional storage.
6. CONCLUSION

Although the purposes of CEAA include fostering both a healthy environment and economy, the Act does not tell us how we are to balance or choose between these goals in situations where both cannot be served. As a result, EIAs under the Act (especially those in respect of complex projects) can result in a conflict between these two types of values that is resolved primarily through the exercise of discretion on the part of government actors. What CEAA does accomplish (and it is important) is to ensure that the potential environmental impacts of proposed activities are considered and that any negative impacts are addressed in an attempt to mitigate these down to an acceptable level. Where sufficient mitigation is not possible, consideration is given to whether the impacts are “justified” in the circumstances. CEAA provides little guidance as to when effects should be characterized as justified. As is typically the case with the Act, government must exercise discretion in making this determination. Given its mitigation focus, CEAA necessarily results in trade-offs being made between environmental and economic values, even where a justification analysis is not undertaken. The central question asked in this thesis is whether eco-pragmatism can assist in determining when such trade-offs are appropriate. As explained, Farber is attempting to create in eco-pragmatism a method that can assist in deciding when environmental protection should be pursued, and at what point it should be abandoned because it has become too costly.

As discussed, there are differences between CEAA and eco-pragmatism and Farber’s approach is instructive (and is arguably an improvement over CEAA) in that it encourages a more complete implementation of adaptive management. It is also instructive because, unlike CEAA, eco-pragmatism identifies a priority value (which can assist in making decisions where there is uncertainty) and implements a more robust definition of the precautionary principle. Farber’s work is important because he has attempted to formulate a coherent means by which competing economic and environmental values can be balanced and reasonable trade-offs arrived at. This is an unavoidable task. The strength and thoughtfulness of his approach is in how he attempts to address the risk and uncertainty that is inherent in environmental decision-making. In contrast, CEAA has the effect of delegating decisions that require trade-offs between environmental and other values to responsible
authorities or Cabinet, without the benefit of any guidelines or applicable decision-making process. However, the main shortcoming of CEAA is not addressed by eco-pragmatism, and eco-pragmatism itself suffers from this particular limitation. In short, the approaches are fundamentally similar in respect of what they are able, or unable, to accomplish when it comes to environmental protection.

CEAA requires decision-makers to focus on the mitigation of negative environmental effects, rather than on achieving long-term environmental gains or observing a minimum environmental standard. As a consequence, projects with adverse impacts are routinely approved. Presumably this pattern results in cumulative environmental impacts occurring over time. At best it would seem that the Act has the effect of slowing the erosion of environmental quality through its requirement for mitigation. It fails however to observe some sort of environmental "bottom line" that would impose an ultimate limit on negative impact. This is not to suggest that CEAA must itself articulate the bottom line. The standard could be implemented through some form of legislation that CEAA is (and other statutes and policies are) subject to. For example, the standard could be imposed as an aspect of integrated planning frameworks that address land-use issues in broad geographic and temporal terms.

Although eco-pragmatism is useful, it is not adequate if Farber's ultimate goal is to protect the environment over the long term. Farber has successfully worked economic factors and values into his eco-pragmatic approach, but he has failed to include an environmental quality bottom line or "backstop". Perhaps, this is purposeful on Farber's part because he has included an economic backstop. It may be that Farber is of the view that his environmental baseline will naturally lead to limits on growth where these are necessary in order to observe natural constraints and avoid environmental degradation.

The approach taken by the Town of Okotoks provides an example of an attempt to set an environmental bottom line. The town (located 18 km south of Calgary,
Alberta) has established growth targets tied to environmental constraints. In 1998 it adopted a Municipal Development Plan that purposefully rejected continued growth and opted to develop within the carrying capacity of the Sheep River watershed, identified to be approximately 30,000 people. The town established a build-out municipal boundary and devised a set of related initiatives in support of its target. This approach to future development is quite different than that taken by the Panel in the Highwood Decision. Although the Panel recognized that conflicts over water were increasing in the Project area due to population growth, increased agricultural production, industrial expansion and environmental concerns, it supported facilitating an increase in water use and consumption through the construction of additional storage facilities. The Panel favoured development that would allow continued expansion, rather than development that attempts to adjust to natural environmental limitations. There is nothing in CEAA (or in eco-pragmatism) to prevent this type of decision from being made.

An environmental backstop that would prohibit any and all harm to the environment would not (for obvious reasons) be practical. However, both eco-pragmatism and CEAA would arguably be improved if they were to operate subject to a standard of acceptable environmental quality that is observed each time a decision is made. Although there is a need for flexibility in environmental decision-making in order to accommodate changing socio-economic and environmental circumstances, it does not follow that this flexibility must be implemented through the exercise of discretion without the benefit of an environmental baseline.

Establishing an environmental quality standard would not be simple. Regardless, we need a way to prevent “slippage” in environmental quality, at least to the best of our ability. Slippage should not be built into the decision-making mechanism, as it is in both CEAA and eco-pragmatism. We should be attempting to decide what impacts are we

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904 Ibid.
905 Ibid.
willing to tolerate in exchange for benefits within a framework that observes and protects an environmental minimum. The challenge will be in reaching agreement concerning the acceptable level of environmental quality and adjusting our behaviour accordingly.
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